

QUICK START

DevCom2000 uses Device Descriptions (DDs) to access data stored in the memory of the smart field device. These DDs are developed by the manufacturer for their products and, in turn, distributed by the HART® Communication Foundation (HCF) worldwide. The latest DDs are included as part of the DevCom2000 installation. Visit the HCF website (www.hartcomm.org) or the ProComSol website (www.procomsol.com) for update information.

The following steps will allow you to install and quickly begin using DevCom2000:

Step 1: Install the DevCom2000 application

Insert the DevCom2000 installation CD into the CD drive on your computer. The DevCom2000 installation will automatically start and guide you through the installation process. Install DevCom2000 in its default location. If the installation program does not begin automatically, please go to Start→Run→ and enter “CDRom drive letter”:\DevCom2000Setup.exe. This will begin the installation program.

Step 2: Connect the communication interface

Connecting to a HART device requires special interface hardware to be attached to your computer. These interfaces ("HART Modems") are available from ProComSol, Ltd and other sources. The interface should be connected and configured. Note: Many USB to RS232 converters will not work with the HART protocol. Due to concerns about port replicators it may be necessary for you use a USB to HART modem (ProComSol, Ltd model HM-USB-ISO) if you do not have an RS232 port.

Step 3: Connect to the field device

Find a connection point for the device's 2-wire 4-20mA loop you wish to communicate with. For communications you must have a suitable load resistance or a 250Ω resistor must be placed in series with the device. Using the clips from the HART interface, connect to the HART device. While the HART Communication signal is available anywhere along the 4-20mA wiring, it is often easiest to connect across the field device's terminals (caution should be observed when working in a hazardous area, many PC's are not rated for intrinsic safety and should only be connected in a safe area).

Step 4: Activate DevCom2000

Launch DevCom2000 by selecting the DevCom2000 icon on your desktop. You can also start the application by going to your computer's Start Menu and selecting **Start → Programs → ProComSol → DevCom2000 → DevCom2000** to launch the program.

You will now be asked to Activate DevCom2000. If you have Activation Codes (located on the CD case), select the Activation method of your choice (Manual or Online). Select the Evaluate option if you do not have Activation Codes. You can use DevCom2000 for 10 days before you need to Activate it.

If you are Activating DevCom2000 by the online method, select online activation. You will be asked to enter the Activation Codes on the next screen. Once entered, DevCom2000 will connect to the Internet to verify the Activation Codes. If you do not have an internet connection, you can activate it by email or phone using the Manual Activation method. Activation details are fully explained later in this manual.

Activation only needs to occur once.

Step 5: Set the DevCom2000 Serial Port

DevCom2000 uses a default serial port of COM99. The serial port should be changed from **Options** → **Basic** on the DevCom2000 menu to the appropriate serial port for the HART Modem. The other settings on the Options tabs typically do not need to be changed.


Step 6: Browse the Device

Operating DevCom2000 is similar to working with Windows® Explorer. DevCom2000 communicates to the field device, establishes a connection and learns its identity. Once DevCom2000 knows its identity, DevCom2000 locates the device's DD and loads it. From this point forward operation of DevCom2000 is determined by the DD provided by the product's manufacturer. If a DD for the device is not present, a generic DD will be used.

By default, DevCom2000 will open the Browser window. The organization of the data in this explorer-style window is dictated by the device DD. The left hand tree-pane of this window shows the logical groups of field device data. These are called "Menus". The right hand data-pane shows the data, any sub-groups and any standard operating procedures found on a given menu.

You can browse through the field device data by expanding (click "+" symbol) or collapsing (click the "-" symbol) the menus in the tree-pane. You can also double-click the folder symbol when seen on the data-pane.

Step 7: Modify the Device's Configuration

The Browser allows access to all of the data exactly as described by the product's manufacturer's DD. When you find elements of the field device's configuration you want to change, simply double-click and edit the data. Once you have changed the configuration to suit your needs, press the Send icon  to commit the data and transfer it to the field device.

Step 8: Performing Maintenance and Testing the Field Device

Many devices perform Methods or Standard Operating Procedures (SOPs) that may need to be performed to ensure the device is in peak condition. These Methods may include calibrating the loop current, trimming the transducer values or performing some diagnostic test on the field device. Methods appear in the data-pane just like data does. Double-click on the Method and it will start running in a separate window. The Method will guide you through the process ensuring the procedure is completely and consistently performed. When the Method is complete the window will disappear.

Step 9: Exit

When you are through working on the field device simply exit DevCom2000. Once the program exits, you can then disconnect the HART interface hardware.

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1 INTRODUCTION

The Smart Device Communicator (DevCom2000) allows access to and management of a HART compatible field device's configuration and calibration. This manual provides the information about the Hardware setup, Communication with Smart devices, and functions of DevCom2000.

DevCom2000 is unique in that it uses the DD of the connected device to determine what information to display, what variables are available for edit, and what procedures to follow for calibration, setup, and maintenance.

1.1 Acronyms and Definitions

| Acronym | Definition |
|------------|--|
| COTS | Commercial-off-the-Shelf |
| DD | Device Description File. This contains the device information. |
| DDL | Device Description Language |
| HCF | HART Communication Foundation |
| DevCom2000 | Smart Device Communicator Software |

1.2 Conventions Used in This Manual

Following formatting conventions are used in this guide:

| Convention | Description |
|---------------------------------|---|
| Words in bold type | Field names including buttons in the display, or important phrases. |
| → Arrow | Windows pull down menus and their options are separated by →. For example, click Device → New Device to connect to a new device. |
| Courier font | Information that you type, parts of the code quoted for explanations or as examples. |
| UPPERCASE | Acronyms |
| UPPERCASE within angle brackets | Command keys For example, press <ENTER>. |

1.3 Document Organization

DevCom2000 user manual is organized into the following sections:

-
- | | |
|------------------|--|
| Section 1 | Describes the scope and objective of DevCom2000 user manual along with the organization of the remaining part of the manual. |
| Section 2 | Provides an overview of the DevCom2000 application and its architecture. |
| Section 3 | Provides the information pertaining to hardware and software requirements for the DevCom2000 application. |
| Section 4 | Provides the steps to install, activate, and uninstall the DevCom2000 application. |
| Section 5 | Provides the steps to start the DevCom2000 application and connecting to field devices. |
| Section 6 | This section explains different aspects of the DevCom2000 application and its functionalities. |

1.4 Getting Help

If you need help or encounter problems when using DevCom2000 or this guide, please contact ProComSol, Ltd. See Appendix B for contact information. Please provide the following information.

Create a text description of the problem. If possible, provide the text in event sequence, which will enable the duplication of the problem. Provide information about the system. This information must include:

- DevCom2000 version and License ID
- Computer information: make, model, CPU type, clock speed, attached peripherals and operating environment (Windows version)
- Device information: make, model, and device revision
- Point of contact: complete mailing address, telephone number, and e-mail address,
- The date and time of the problem occurrence.

2 OVERVIEW OF DEVCOM2000

Field devices such as flow, pressure, level, temperature transmitters, and valve positioners provide the physical connection to the process. These devices allow the control system to monitor and manipulate process conditions. HART devices maintain a real-time database of process, configuration, identification, and diagnostic information. This information can be accessed using the HART Field Communications Protocol.

HART devices are capable of providing functions and features far beyond the basic task of providing a process input or accepting a control output to manipulate process conditions. Many HART compatible device manufacturers create a DD (Device Description) describing all of these functions and features specific to that device. The DD also provides information essential to the successful configuration and calibration of the device.

DevCom2000 uses these DD's to access the data stored in a device, providing full configuration and setup support for all registered HART DD's.

DevCom2000 accesses and presents field device data based solely on its DD. No other files, information or custom drivers are required. DevCom2000 is intended to monitor and configure a single device at a time, it is directly connected to the current loop of the particular device and:

- Provides user interface to configure the HART field device,
- Provides a means to configure and view all the parameters related to HART field device, and
- Provides an option to view the detailed status and diagnostic capability of the device.

DevCom2000 allows viewing and modifying of field device parameters based on the DD. Using the device's DD, DevCom2000 performs various tests to verify the proper operation of the HART device. DevCom2000 runs as a standalone software package and must have a HART compatible modem attached to the system to interrogate the HART base devices. A HART modem is not required for HART-IP communications to a WirelessHART Gateway. In this case, an Ethernet connection is required.

3 SYSTEM REQUIREMENTS

The following minimum system requirements are recommended for operation of DevCom2000.

| | |
|--------------------|--|
| PC | Processor Speed: Pentium, 600 Mhz Memory: 256 MB Hard Disk Space: 500 MB Monitor: 256-color VGA |
| HART Modem | USB to HART modem, or Bluetooth to HART modem, or RS-232 to HART modem. ProComSol, Ltd supplies HART modems. Not needed for HART-IP. |
| Communication Port | USB, Bluetooth, or RS-232. Ethernet for HART-IP. |
| Operating System | Windows XP, Windows Vista, Windows 7, Windows 8 |

4 DEVCOM2000 INSTALLATION

4.1 Prerequisites

You need to be familiar with the basic functions of the following when installing the DevCom2000 tool:

- Microsoft Windows
- HART communication interface
- HART field device

4.2 Installing the DevCom2000 Application

To install the DevCom2000 application in a standalone system, perform the following steps:

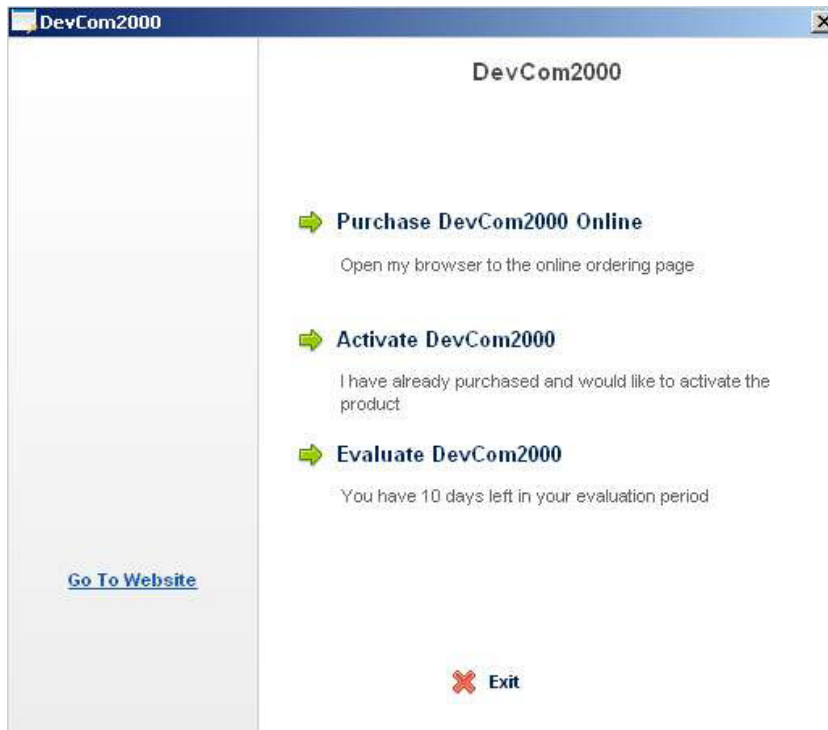
| Step | Action |
|------|---|
| 1 | Insert the DevCom2000 CD into the CD-ROM drive. Auto run should begin installation, if not: |
| 2 | Click Start and choose Run . From the Run window, click Browse . |
| 3 | In the Look In box, browse to your CD drive. |
| 4 | Double-click the drive to access the CD content. |
| 5 | Look for the DevCom2000Setup.exe file and double-click the same. This process will take you through a sequence of installation wizard steps. |
| 6 | Follow the instructions on the upcoming screens to complete the Installation. |

4.3 Activating DevCom2000

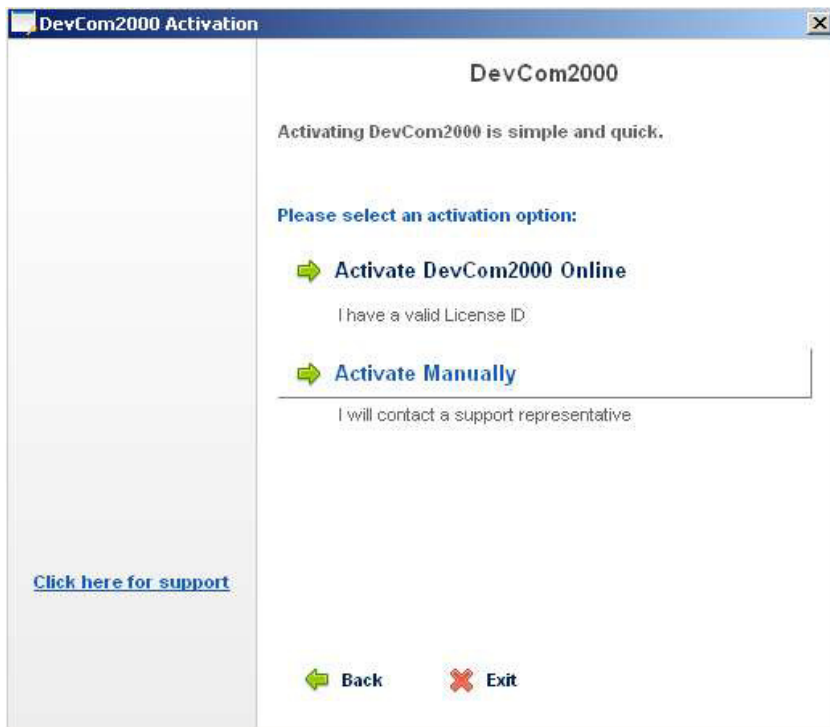
DevCom2000 must be activated before use. If the program is not activated, it will not run after 10 days. The following procedure will activate the software.

| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|---|
| 1 | Start the DevCom2000 Application. The following Activation window is displayed: |
|---|---|



- If you want to evaluate DevCom2000 before purchasing, select the “Evaluate DevCom2000” option. You will have 10 days of unlimited program use before you will need to purchase a license. Select “Purchase DevCom2000 Online” to go to the ProComSol, Ltd website to purchase a license.
- | | |
|---|---|
| 2 | If “Activate DevCom2000” is selected, the following window appears: |
|---|---|



- 3 If the “Activate DevCom2000 Online” option is selected, the following window appears.



Enter the information from the Activation label on the CD case. Select “Continue” to process the information.

If the codes were successfully entered, the program will continue as normal. You will not need to perform the activation process again.

- 4 If the “Activate Manually” option is selected, the following window appears:



You will then need to contact ProComSol, Ltd to obtain the Activation Codes. You must supply the User Codes to ProComSol, Ltd support personnel (Your user codes will be different than those shown here). You can register manually in any of the following ways:

1. Call ProComSol, Ltd at 216.221.1550. Have the program License ID and User Codes ready.
2. Or, send an email to support@procomsol.com containing your company name, License ID, and User Codes.
3. Or, send a fax to ProComSol, Ltd (216.221.1554) containing your company name, License ID, and User Codes.

The above information will be processed at ProComSol, Ltd and an appropriate response will contain the required Activation Code information that the user will need to enter.

If successful, the program continues as normal. You will not need to perform the activation process again.

- 5 We have tried to make the Activation process as easy as possible. Contact ProComSol, Ltd if you have any difficulties.

4.4 Connecting to the HART Network

The DevCom2000 application communicates with the HART Field Devices through a HART compatible communication interface (e.g., a "HART Modem"). Using this communication interface you will transmit real-time HART data between DevCom2000 and the connected HART compatible field device.

There are a wide variety of HART compatible interfaces. Please follow the manufacturer's instruction for connecting your interface to the PC. This manual uses the HART modem manufactured by ProComSol, Ltd, called the HM-USB-ISO. It uses the USB interface.

Insert the USB connector on the HM-USB-ISO into your computer's USB port. Using the clips on the wires from the HART interface, connect to the device across the 4-20ma signal. If a suitable load resistance is not available, a 250 Ω resistor must be placed in series with the device power supply.

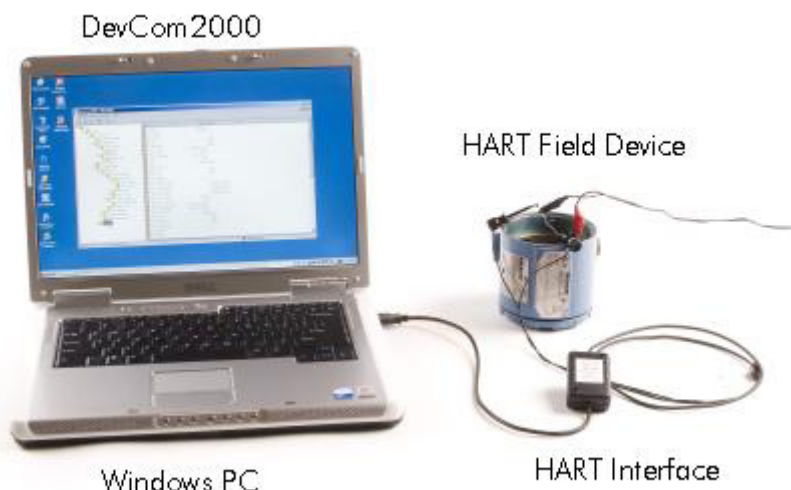


Figure 1 Typical DevCom2000 Hardware Setup

4.5 Uninstalling the DevCom2000 Application

To uninstall the DevCom2000 application, perform the following steps:

| Step | Action |
|------|--|
| 1 | Click Start → Programs → ProComSol → DevCom2000 → Uninstall DevCom2000 |
| 2 | Or, Click Start → Settings → Control Panel → Add/Remove Programs |
| 3 | In the <i>Add/Remove Programs</i> dialog window, select the DevCom2000 program that you want to uninstall. |
| 4 | Click Remove . |
| 5 | Click OK to confirm the removing of the selected application. |

5 USING DEVCOM2000

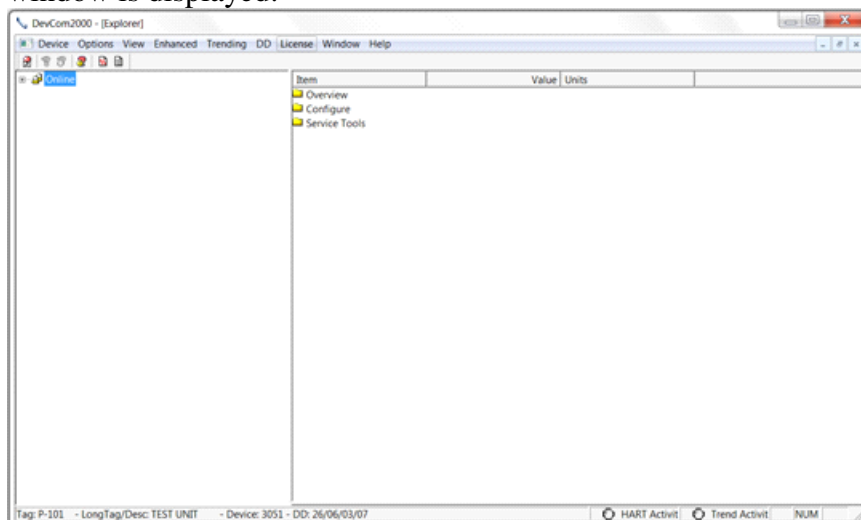
5.1 Starting DevCom2000

The HART compatible field device must be connected to a PC or tablet running DevCom2000 to configure or calibrate the field device, or to view the field device's data. Make sure to establish the physical connection between the field device and the DevCom2000 computer. With the physical connection established, launch DevCom2000 by clicking the DevCom2000 icon on your desktop. You can also start the application by going to your computer's Start Menu and selecting **Start → Programs → ProComSol → DevCom2000 → DevCom2000**.

If your computer is running an anti-virus program such as McAfee, you may get a message about a program wanting to access the internet. This is normal. DevCom2000 uses TCP/IP to communicate with the Communication Log program.

Step Action

- 1 Start the DevCom2000 Application. The following application window is displayed:

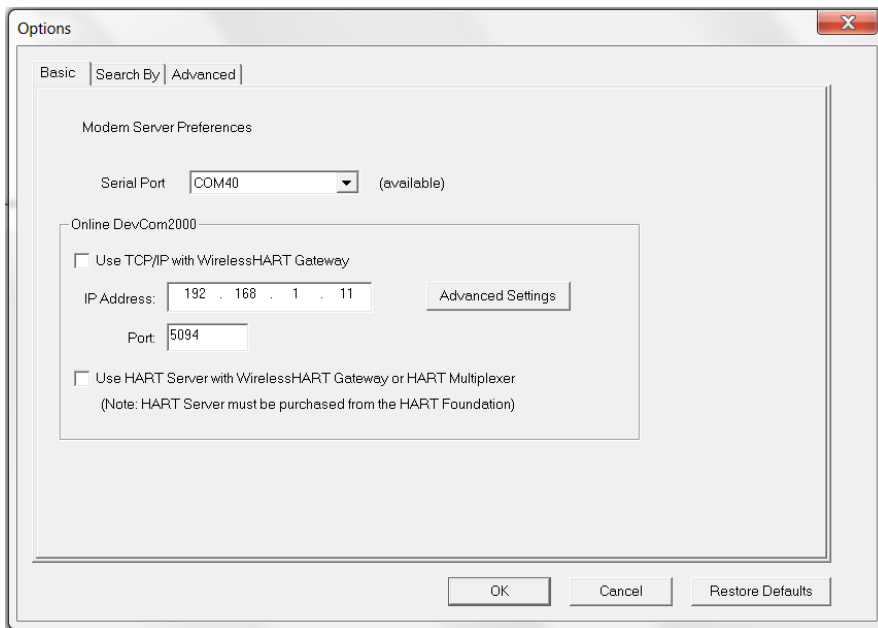


DevCom2000 will then automatically identify the field device and open a communication channel to (i.e., a connection with) the field device.

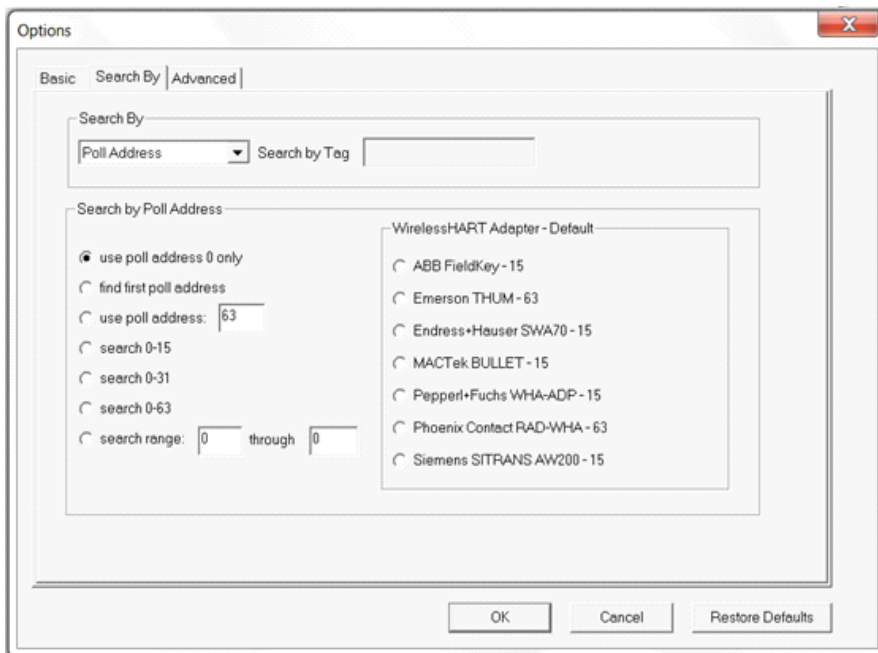
- 2 Setting Options **Options → Basic**

If communications cannot be established, you may need to change the communication settings using the Options dialog box.

The serial port box will show the available com ports. Select the one your HART modem is using.

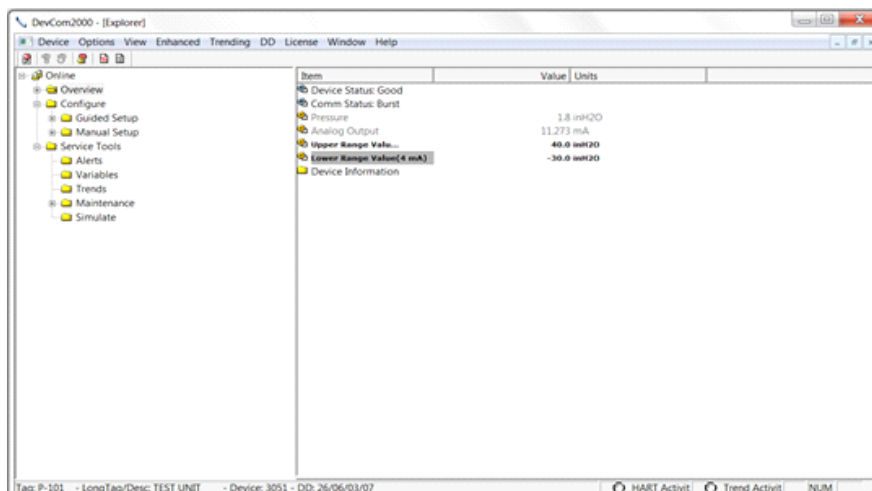


- 3 You may also change the polling options for the computer. If you do not know the poll address of the device you are trying to communicate with, use the default address 0 setting. To do this either click on the **Search By** tab or go to **Options -> Search**



Make sure that **Poll Address** under **Search By** is selected.

- 4 When the device is connected to DevCom2000, the browser window appears with online (i.e. root menu) selected.



The left pane of the window shows the menu structure and the right pane of the window displays corresponding parameters of the menu selected.

The DevCom2000 screens shown in this document are only an example of what you may see when connected to your field device. What you see is actually controlled by the DD and the device. The menus, data, status and configurations displayed are specified by the field device's manufacturer in the DD itself.

- 5 Select the required menu to configure or review the field device's data.

5.2 Getting Familiarized with DevCom2000 Explorer

5.2.1 Using the Menus

DevCom2000 Explorer provides visual representation and structure of the application window.

Menu

Explanation

| | |
|-----------------|--------|
| New Device | Ctrl+N |
| Document Device | |
| Download / View | |
| Exit | |

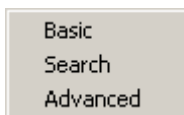
The **Device** Menu offers the following sub-menu options:

New Device - Connect to a new device or reconnect to the same device.

Document Device – Brings up the Document Device dialog box.

Download / View – Brings up the Download dialog box which provides Configuration File features.

Exit - Exit DevCom2000.

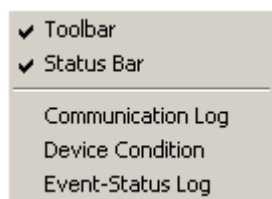


The **Options** Menu offers the following sub-menu options:

Basic- Select what COM port the device is connected to and use WirelessHART gateway.

Search- Search by Poll Address, Long or Short Tag.

Advanced- Select HART Master, Language, and DD Startup.



The **View** Menu offers the following sub-menu options:

Toolbar - Hide or show the Tool Bar.

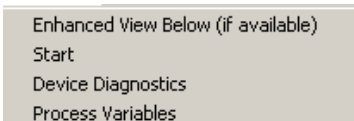
Status Bar - Hide or show the Status Bar.

Communication Log – Open the Communication Log window.

Device Condition – View detailed device status.

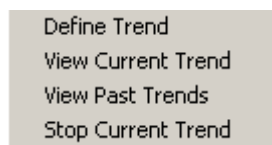
Event-Status Log – View log of events and status changes

Example of available Enhanced Menus:



The **Enhanced** menu offers enhanced device menus. Some devices do not have enhanced menus and this menu will only say “Enhanced View Below (if available).”

No Enhanced Menus available:



The **Trending** menu offers the following sub-menu options:

Define Trend – Brings up the Define Trend dialog box where a trend is started.

View Current Trend – Brings up a real-time graph of values currently being trended.

View Past Trends – Brings up the View Trend dialog which contains past trend files. Selected trend files can then be graphed.

Stop Current Trend – Stops the current log in process.

Add DD
Available DDs

The **DD** menu offers the following sub-menu options:

Add DD – Brings up the dialog that adds a DD to the library. Also used to give labels to non-standard library DDs.

Available DDs – Brings up a browser of all the DDs installed in the library.

Launch FDT Frame

The **DTM** menu offers the following sub-menu options:

Launch FDT Frame– launches the FDT Frame program.

(Future)

DevCom2000 Help
Com Troubleshooter
Device Help
About DevCom2000

The Help menu offers the following sub-menu options:

DevCom2000 Help – Brings up Help information for the DevCom2000 application.

Com Troubleshooter – Brings up the DevCom2000 Com Troubleshooter.






Device Help – Brings up help information for the connected device (if available).

About DevCom2000 – Shows copyright information, support information, and application Version Number.

5.2.2 Using the Toolbar

When you start the application, by default, the toolbar buttons appears on the main window. If it fails to display, click **View → Toolbar** option from the menu bar to bring up the toolbar.

Following are the buttons available in the DevCom2000 application toolbar to perform the necessary tasks:

| Button | Description | Corresponding Menu Option |
|---|---|---------------------------------|
|  | Connect to a new device | Device → New Device |
|  | Send parameter changes to the device | |
|  | Cancel parameter changes | |
|  | View more status on Device and Communication (Command 48 status) | View → Device Condition |
|  | View Communication log | View → Communication log |



View Event log

View → Event-Status log









Launch FDT Frame (Future)

DTM → Launch FDT Frame

5.2.3 Familiarizing with Icons

DevCom2000 application uses different icons to represent different elements of the application. Following table lists the icons and their meanings:

| Icon | Meaning |
|--|---|
|  | Indicates a menu or submenu in the navigation tree |
|  | Indicates a currently selected menu or submenu in the navigation tree |
|  | Online menu icon. The actual DD menu comes under this. |
|  | Indicates a “Variable” item |
|  | Indicates a “Method” (Standard Operating Procedure) item |
|  | Indicates an “Edit Display” item |

6 FUNCTIONS AND BASIC OPERATIONS

6.1 Overview

DevCom2000 allows the user to monitor and configure a single device at a time in the field. Each device is associated with the DD when the device information is present. A DD may contain any of the following parameters/elements:

Variable

A variable is defined as the data contained in the device (e.g. Device Firmware Version). There are two types of variables:

Editable Variable – It allows the operator to modify the value and download it to the device.

Non-Editable Variable – It is a read-only data from the device.

Edit Display

This option is used to view a group of parameters. You can also modify a single parameter from this group, based on which other parameters of the device get altered.

For example, if the Engineering Unit of the device is modified, the corresponding Low Limits and High Limits change as per the Engineering Unit set.

Method / Standard Operating Procedure (SOP)

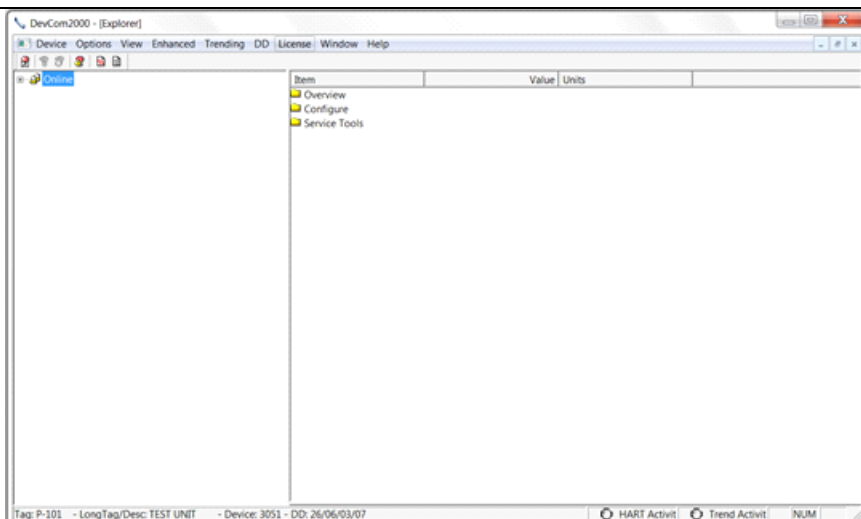
This option helps to perform various tests on the device for instance, Self Test and Loop Test. A Method or SOP is a series of steps that are executed in a sequence results in the completion of some device related tasks. When a method gets invoked, it gives various warning messages and options to the user, by which the user can thoroughly test the device. If a test is aborted by operator command at any stage of the sequence, the method invokes additional steps to bring the device back to its original state before the test.

6.2 Viewing Device Configuration (typical, actual view may change based on DD)

To view the configuration of the device that is connected to DevCom2000, perform the following steps:

| Step | Action |
|------|--|
| 1 | Ensure that the application is running and communications have been established: |

Step Action

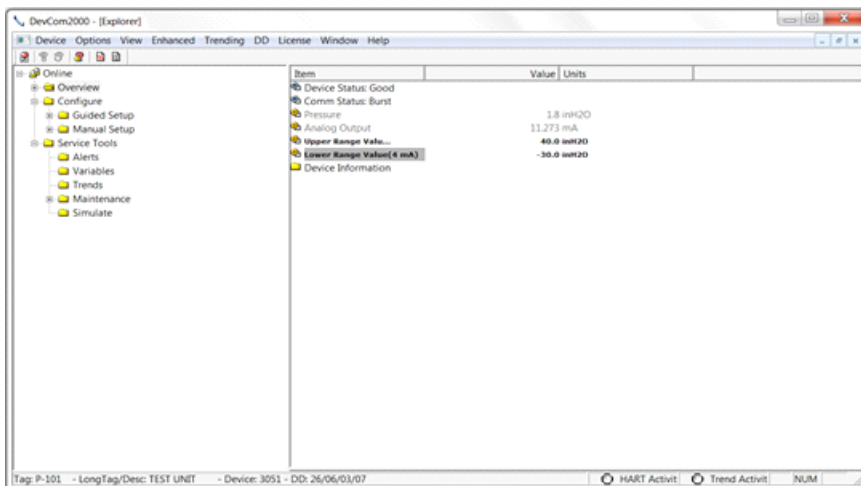


The left pane of the window shows the menu structure and the right pane of the window displays corresponding parameters of the menu selected.

The menus are displayed depending on the type of device that is being connected. These menus are displayed based on the DD file of the particular device.

If no DD is available for the device the DevCom2000 will select the standard DD. This should provide limited functionality for the device. NOTE: If a parameter is updated that is not supported by the device you will receive an error.

- 2 Expand the menu by clicking the “+” sign and double-click to view the device parameters. Below is an example of an expanded menu:



- 3 Select the menu and view the associated parameters to view the device information.

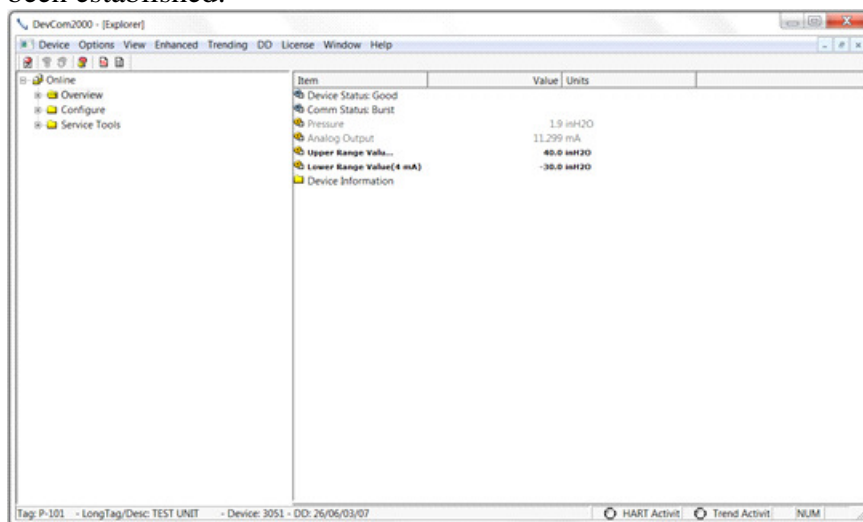
6.3 Configuring Device Information

6.3.1 Overview

DevCom2000 allows you to view and configure the field device parameters based on the device description. However, the device vendor defines most of the parameters at the factory. These parameters become read only for the users and the user cannot modify the values. The related variables are grouped under various menus of different levels as defined in the DD file. Expand or collapse the tree view using the “+” or “-” sign to access the device configuration parameters.

Following table describes the details about the device configuration:

| Step | Action |
|------|--|
| 1 | Ensure that the application is running and communications have been established: |



The left pane of the window shows the menu structure and the right pane of the window displays corresponding parameters of the menu selected.

- Expand the menu by clicking the “+” sign and double-click to view the device parameters.
- There are three types of variables: dynamic, read/write and read only. The parameters that are grayed out indicate that these are dynamic variables (variables that get updated online by the device) or read only variables.

Following points describe how the device parameters represents their status when connected to DevCom2000:

Bold Font: Modifiable Values

Normal Font: Menu Item

Gray Font: Dynamic or Read Only Variables

- Select the parameter and configure the values, as required.

| Step | Action |
|------|--------|
|------|--------|

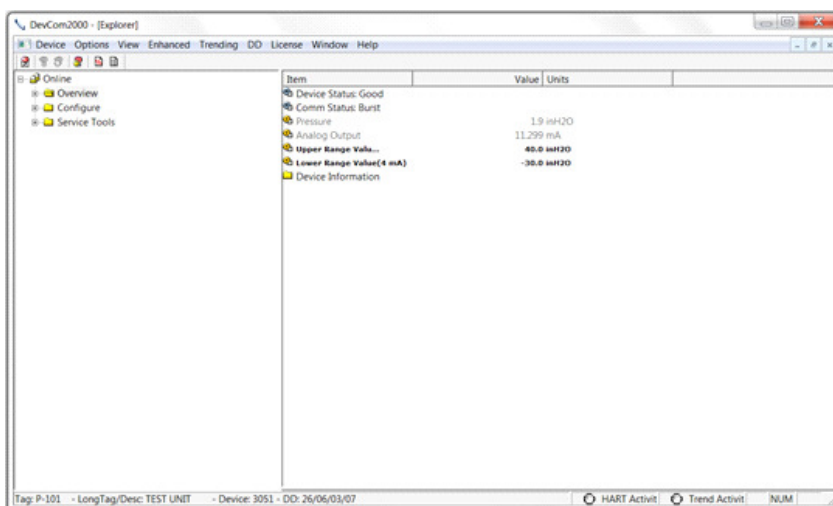
- | | |
|---|---|
| 5 | The subsequent topics explain how to configure device parameters. |
|---|---|

6.3.2 Variable

To edit the parameter variables of the connected device, perform the following steps:

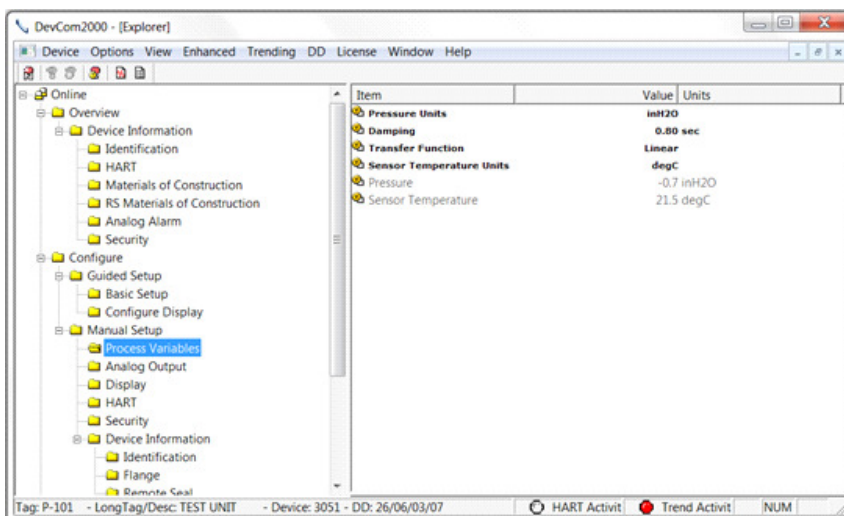
| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|--|
| 1 | Ensure that the application is running and communications have been established: |
|---|--|



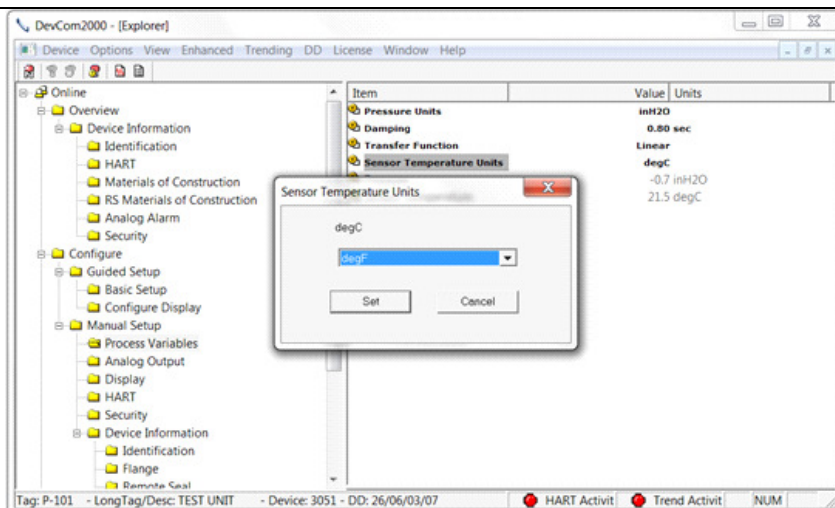
Expand the menu by clicking the “+” sign and double-click to view the device parameters.

- | | |
|---|---|
| 2 | Select the menu where the editable parameter is present as shown below: |
|---|---|

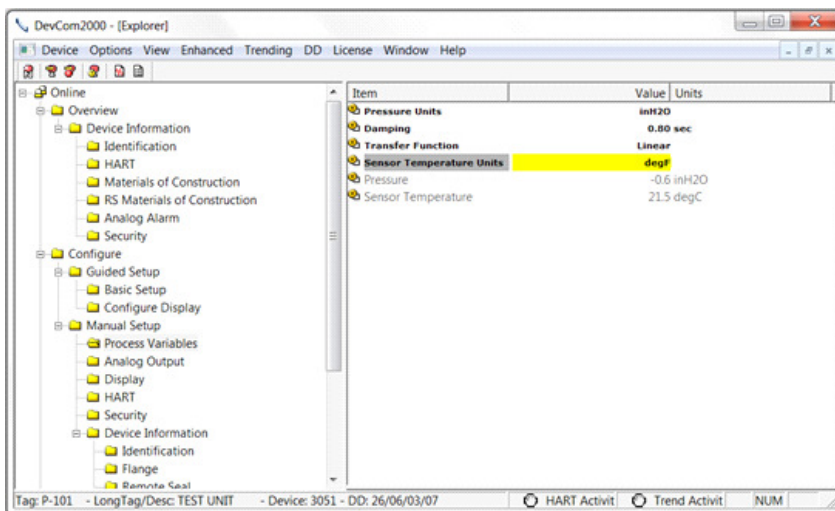



- | | |
|---|---|
| 3 | Double-click the variable to edit it. The following dialog box appears on the screen: |
|---|---|

Step Action

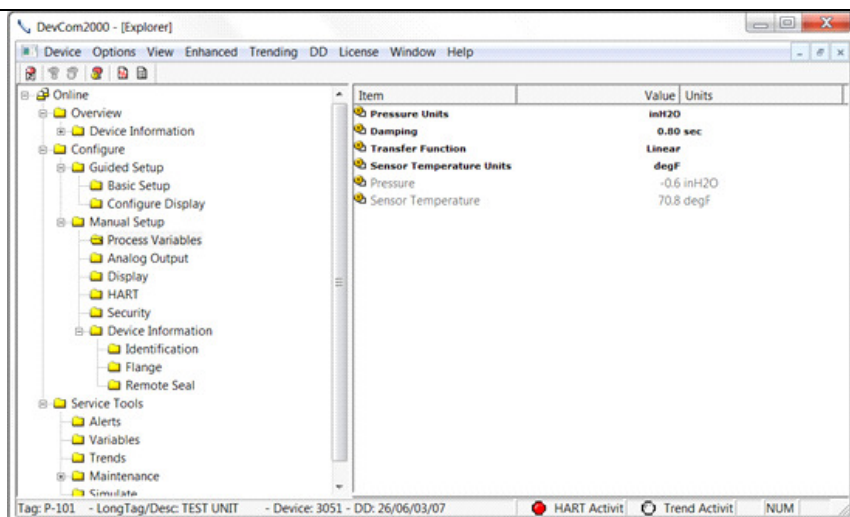


- 4 Make the changes to the parameter value, as required.
- 5 Click **Set** to accept the changed value. The change gets reflected as shown:



- 6 Click on the **Send** icon  to commit the changes to the device.
- 7 When the value is no longer yellow, the variable has been changed in the device.

| Step | Action |
|------|--------|
|------|--------|



The Send and Cancel Icon will now be grey as well. This indicates that there are no new changes to be sent to the device.

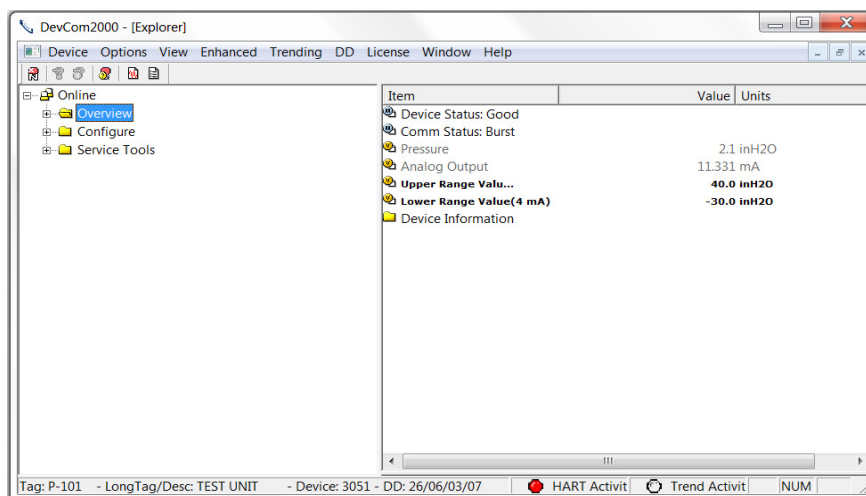
6.3.3 Edit Display

The Edit Display is a variation on the Variable edit. An additional window helps the user view a group of parameters based on the DD. You can also modify a single parameter from this group. Parameters linked to the edited field will be updated automatically

To view and configure these variables, perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

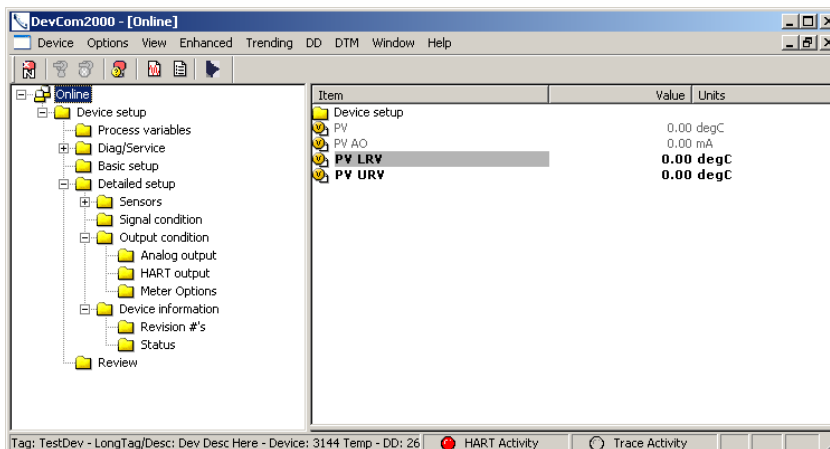
- 1 Ensure that the application is running and communications have been established



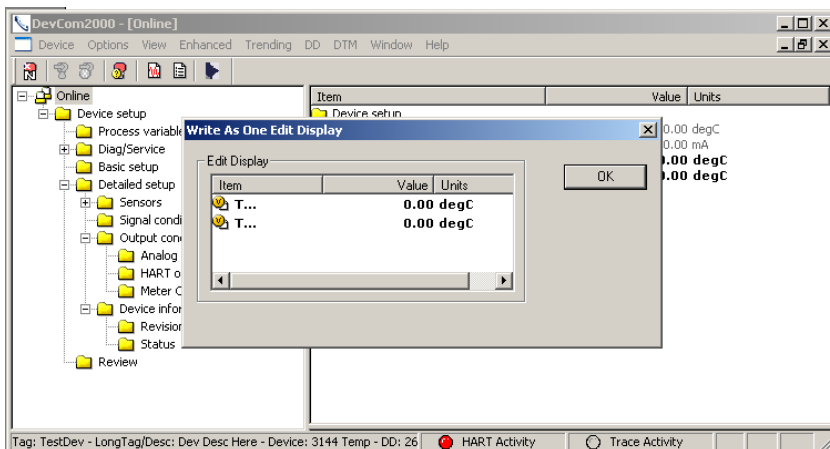
Expand the menu by clicking the “+” sign and double-click to view the device parameters.

| Step | Action |
|------|--------|
|------|--------|

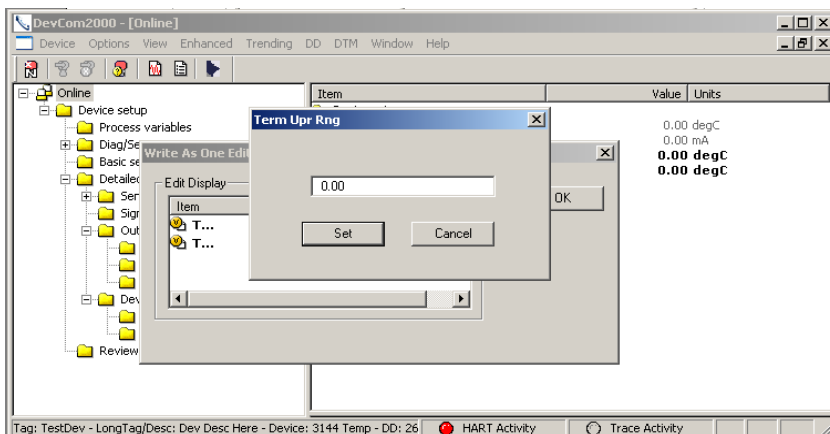
- | | |
|---|--|
| 2 | Select the menu where the required variable is present as shown below: |
|---|--|



- | | |
|---|--|
| 3 | Double click the parameter you wish to edit. The following dialog box appears on the screen: |
|---|--|

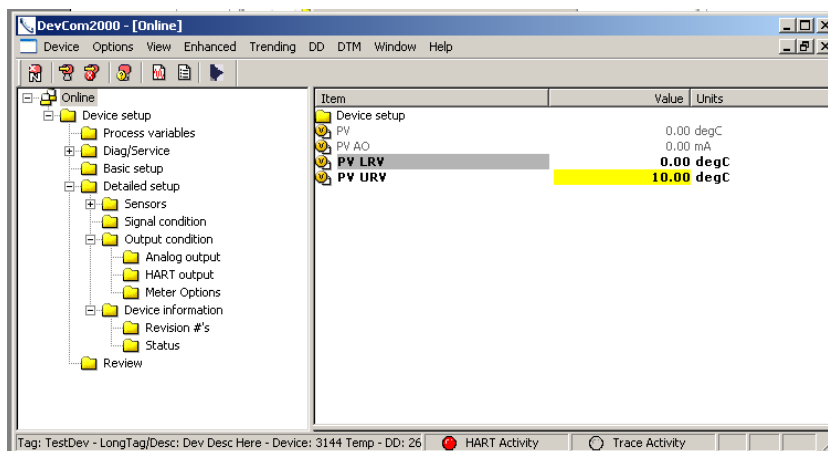


- | | |
|---|--|
| 4 | Double click the parameter you wish to edit. The following dialog box appears on the screen: |
|---|--|



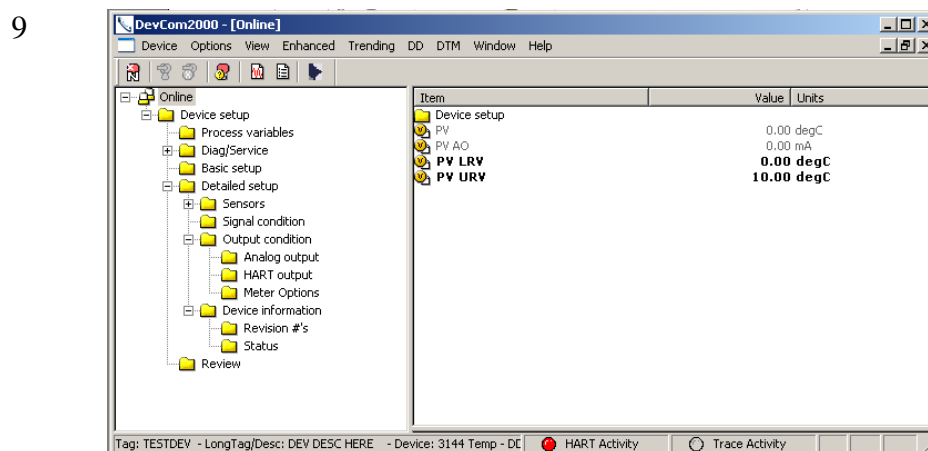
| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|---|
| 5 | Make the change to the value, as required. |
| 6 | Click Set to accept the changes. Or press Cancel to cancel the changes. |
| 7 | Click OK to close the dialog box. |



Again the yellow means the parameter is changed and ready to be sent to the device.

- | | |
|---|---|
| 8 | Click on the Send icon  to commit the changes to the device. |
|---|---|



After being sent the change is reflected in the device info.

6.3.4 Executing Methods or Standard Operating Procedures

Methods are defined in the DD file for the device that DevCom2000 is connected to. You can select the Method and execute it for calibrating the device, trouble shooting, etc. Method execution leads you through a number of steps, like in a wizard.

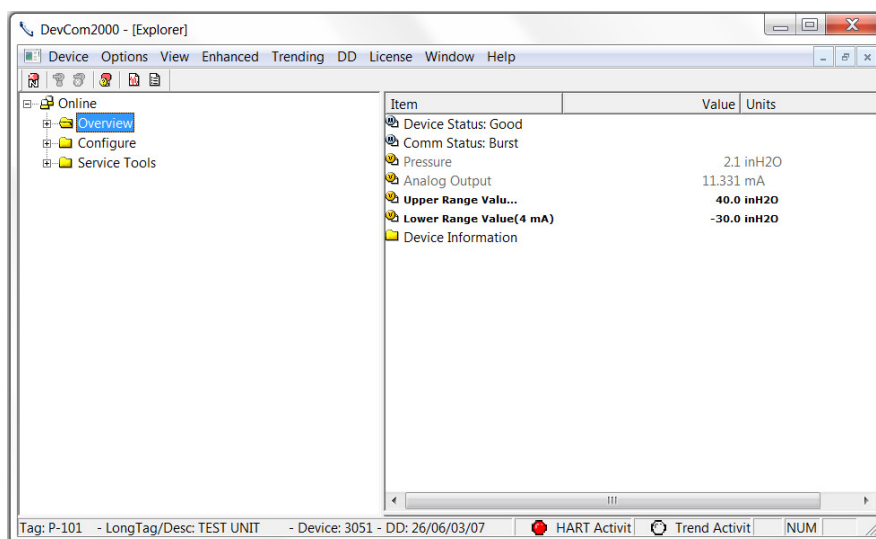
A Few examples of methods include:

- Setting high and low range calibration points
- Calibration of the device
- Run the advanced diagnostic test procedure
- Execute tests to gather information on device operation.

To execute a Method, perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

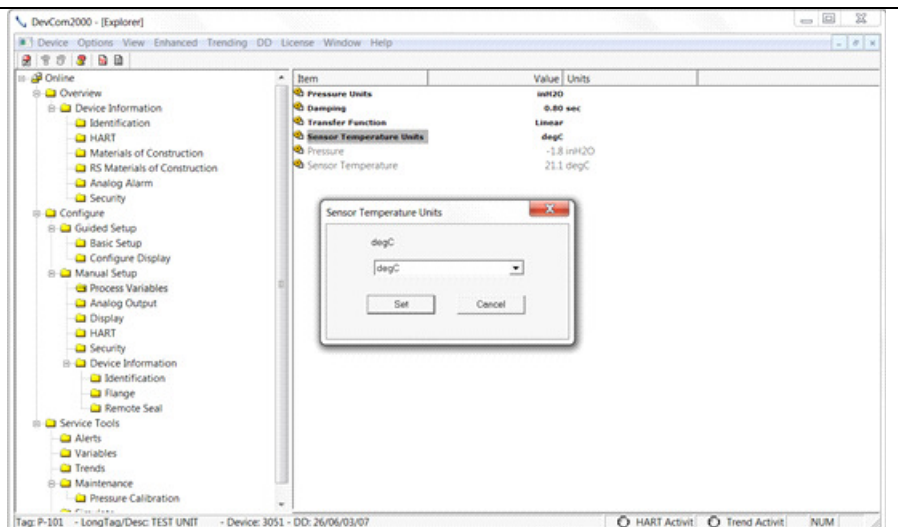
- | | |
|---|--|
| 1 | Ensure that the application is running and communications have been established: |
|---|--|



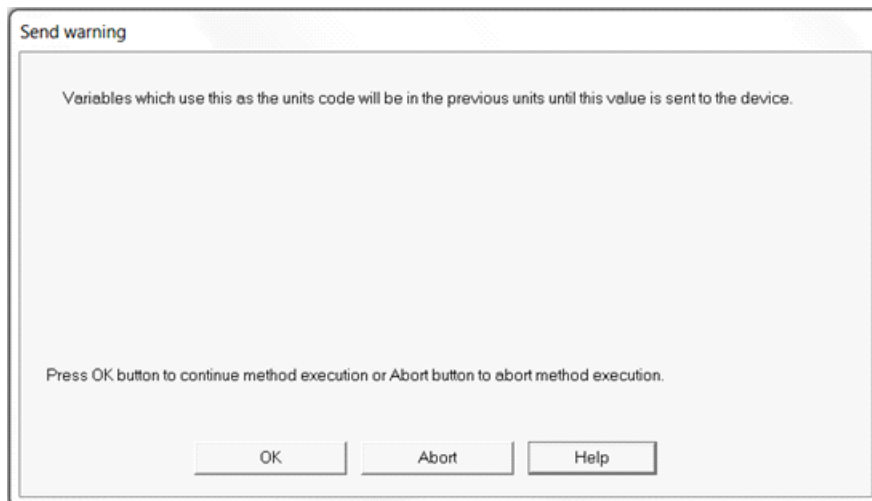
Expand the menu by clicking the “+” sign and double-click to view the device parameters.

- | | |
|---|---|
| 2 | Select the menu where the method is present and double-click to execute it. |
| 3 | Below is an example of a Method dialog box: |

Step Action



Click Set to open a Method dialog box:



- 4 Click **OK** to move to the next dialog in the Method sequence.
- 5 Or, click **Abort** to cancel the Method execution.
- 6 Click **Help** to get specific help for that step of the Method. This Help information is provided by the device DD.

6.4 Calibrating HART Field Devices

Calibration of field devices and loop test are achieved by executing the Methods or Standard Operating Procedures that are specific to device. Methods are defined based on the test parameters specific to the device, providing information for the calibration of that device.

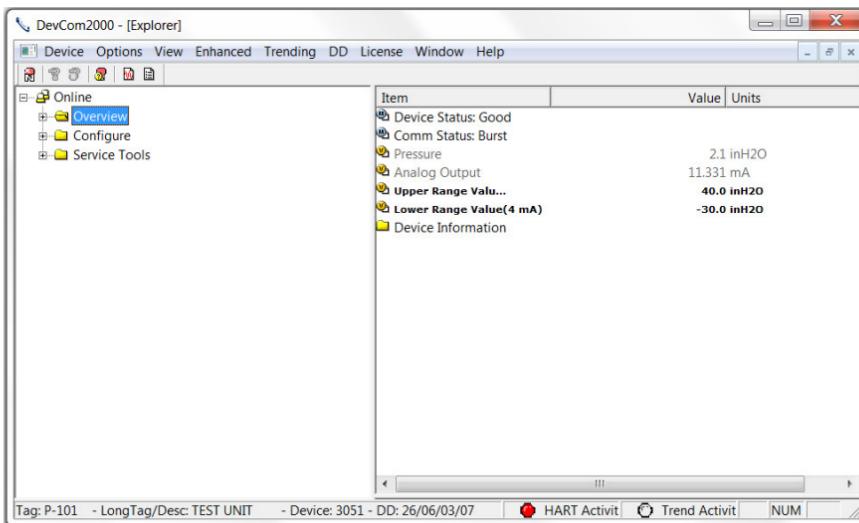
See the previous section for Method execution.

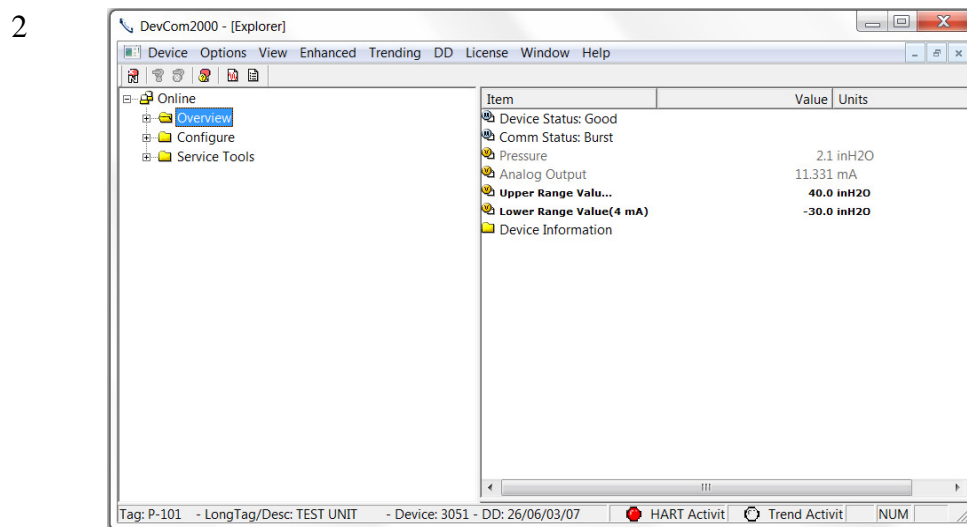
6.5 Viewing the Device Status

DevCom2000 provides the user with the ability to monitor the device specific status of the device and the communication network.


When there is error communicating with the device, it is recognized and indicated to the user. The user can view more details of such errors, using the **View → Device Condition** from the main window.

To view the device and communication status, perform the following steps:

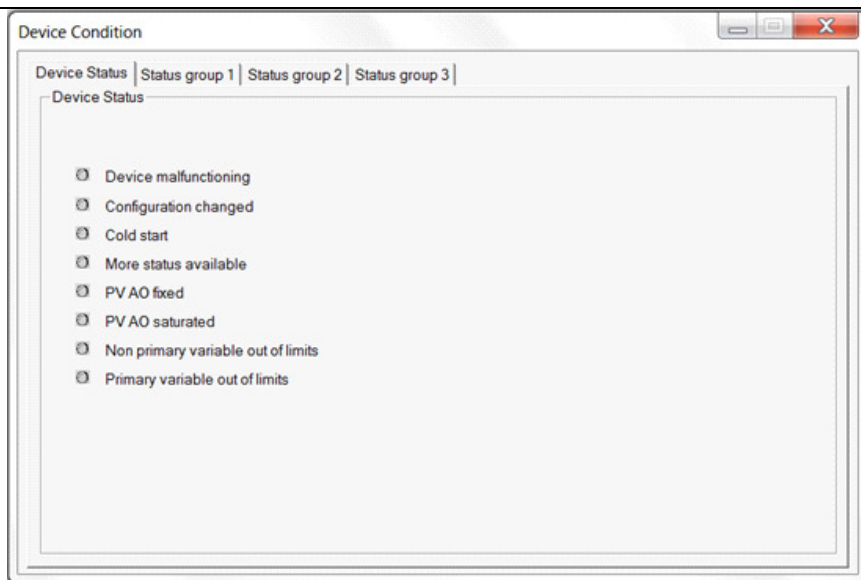
| Step | Action |
|------|---|
| 1 | Ensure that the application is running and communications have been established: |
| 2 |  |
| 3 | Select View → Device Condition from the main window or choose the status icon  from the toolbar. Following window is displayed: |



Expand the menu by clicking the “+” sign and double-click to view the device parameters.

3 Select **View → Device Condition** from the main window or choose the status icon  from the toolbar. Following window is displayed:

| Step | Action |
|------|--------|
|------|--------|



The *Device Status* tab option shows the status of the device and the communication network. The individual status is indicated by green and red LEDs.

- | | |
|---|---|
| 4 | Additional tabs may be available depending on the DD. |
| 5 | Click X to close the Status window. |

6.6 Viewing the Communication Log

DevCom2000 allows the user to view the actual communications between DevCom2000 and the device. You can view send commands and received responses.

If your computer is running an anti-virus program such as McAfee, you may get a message about a program wanting to access the internet when you open the Communication Log. This is normal. DevCom2000 uses TCP/IP to communicate with the Communication Log program.

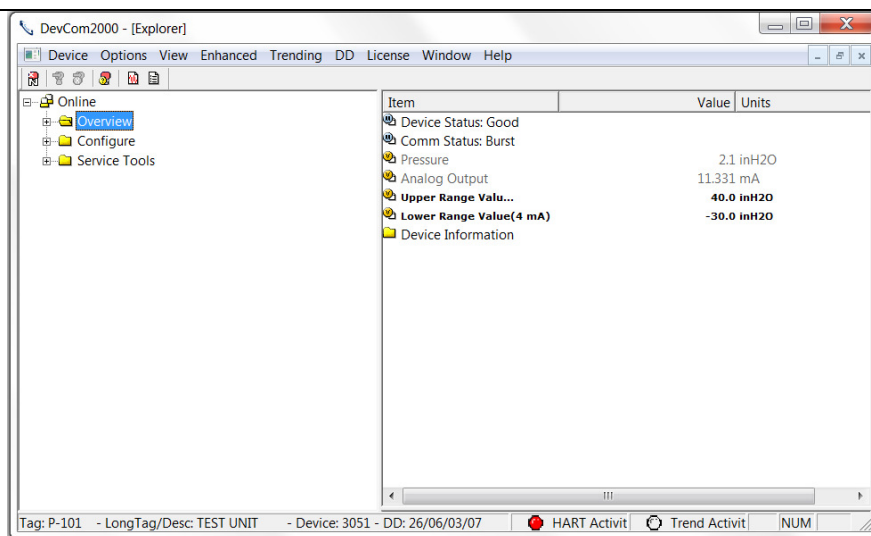
If no data appears in the Communication Log, this may be due to an anti-virus program. Close the Log window and re-launch.

To view the communication log, perform the following steps:


| Step | Action |
|------|--------|
|------|--------|

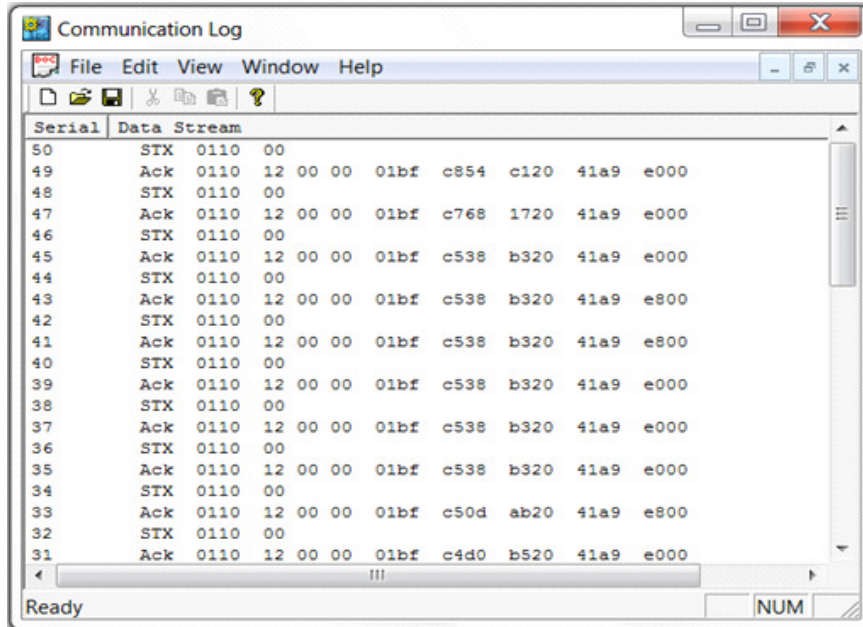
- | | |
|---|---|
| 1 | Ensure that the application is running and communications have been established |
|---|---|

Step Action



Expand the menu by clicking the “+” sign and double-click to view the device parameters.

- 2 Select **View → Communication Log** from the main window or choose the communications log icon  from the toolbar. Following window is displayed:



Note: The communications log lists actual HART commands and the responses from the unit. A good understanding of the HART protocol is required to interpret this data.

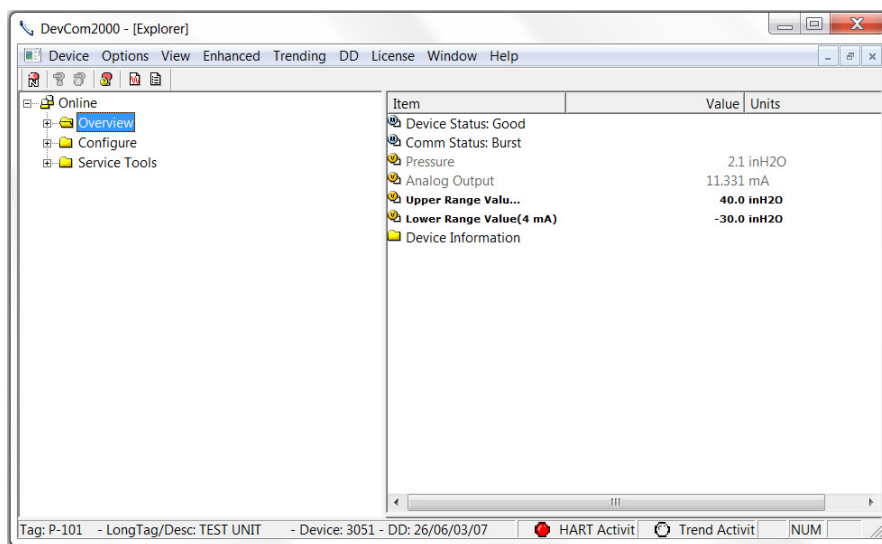
- 3 Select **File → Exit** to get back to the main window. Or, close the Communication Log window by clicking on the X.

6.7 Viewing the Event-Status Log


DevCom2000 allows the user to view the error conditions of the device and the communication network.

To view the Event-Status Log, perform the following steps:

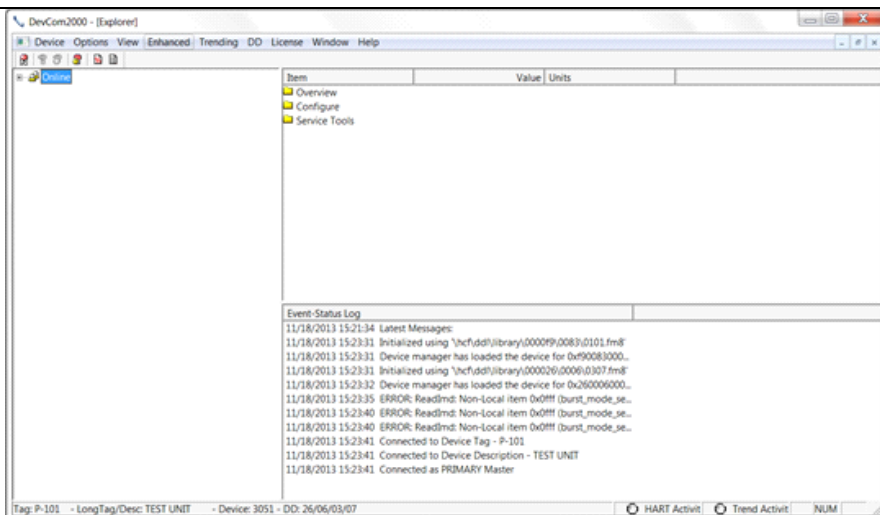
| Step | Action |
|------|--|
| 1 | Ensure that the application is running and communications have been established: |




Expand the menu by clicking the “+” sign and double-click to view the device parameters.

| | |
|---|--|
| 2 | Select View → Event-Status Log from the main window or choose the Event-Status log icon  from the toolbar. An additional Event Status window is displayed: |
|---|--|

| Step | Action |
|------|--------|
|------|--------|



- | | |
|---|--|
| 3 | To close, go to View → Event-Status Log menu option or click on the  icon to go back to the original window. |
|---|--|

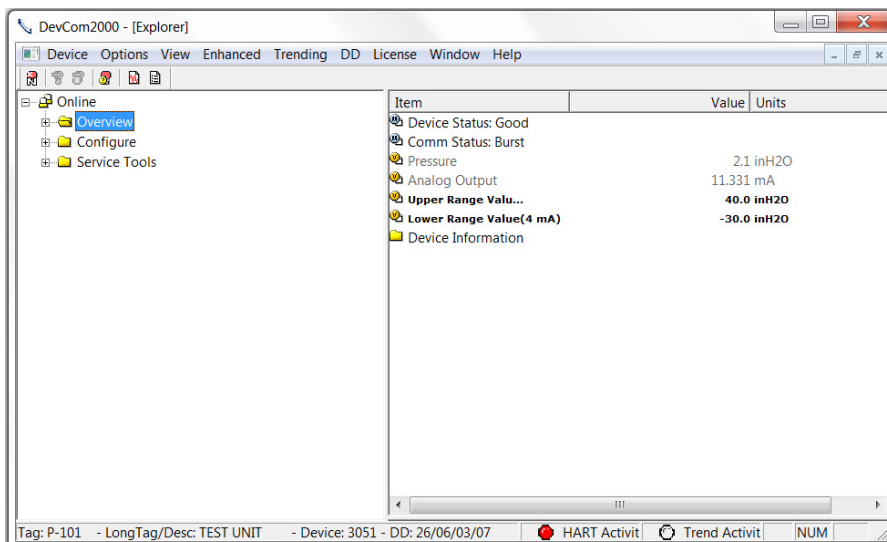
6.8 Saving Device Configuration to Disk

HART Device configurations can be saved to disk as a text file to document the device. Fields are delimited with a comma so that the data can be imported into configuration management software packages. A PDF version of the configuration is also created.

To save device configurations to disk, perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|--|
| 1 | Ensure that the application is running and communications have been established: |
|---|--|



| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|---|
| 2 | Select Device → Document Device from the main window. The Document Device Dialog Box is displayed: |
|---|---|



- | | |
|---|--|
| 3 | The default directory is based on Windows User Accounts. The default file name is Tag_Device ID. The directory and filename can be changed by the user. Use the “Browse” button to change directories and/or filenames also. |
| 4 | Enter a Note in the Notes: field if desired. Maximum of 250 characters. |
| 5 | Press the “Save Device Config” button to save device configuration. |
| 6 | If the filename has already been used, the following Dialog Box is displayed when Save Device Config is pressed: |



Append: Adds the number shown to the end of the file name

Overwrite: Deletes and writes over the existing file

Cancel: Returns to the previous menu

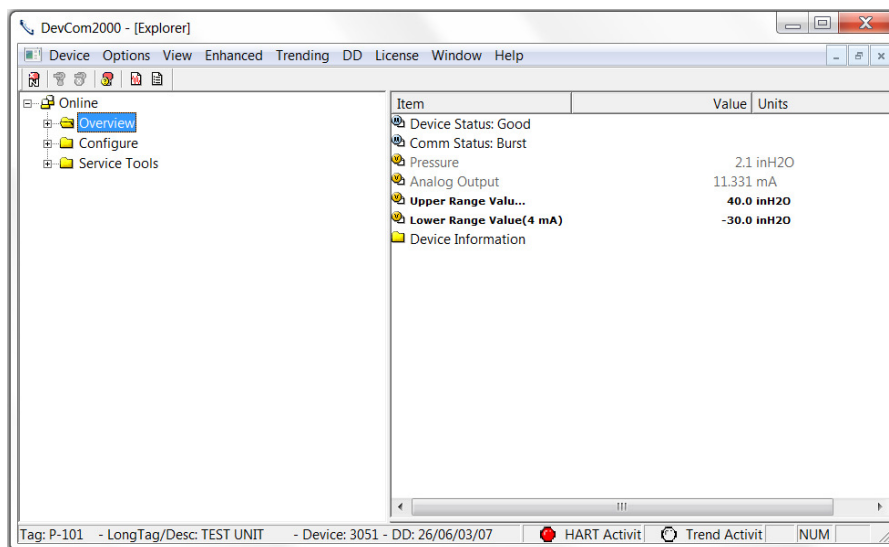
6.9 Download Configuration to Device

Saved configuration files can be downloaded back to devices. This is useful for “Cloning” a device, either for replacement or plant setup.

To save device configurations to disk, perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|--|
| 1 | Ensure that the application is running and communications have been established: |
|---|--|



- | | |
|---|--|
| 2 | Select Device → Download from the main window. The Download Dialog Box is displayed: |
|---|--|

Step Action

Download File

Available Configurations (Double Click to Select)

| N | Tag | LongTag/Desc | Device | Date | File | Notes |
|----|----------|---------------|---------------|------------|-----------------|------------|
| 01 | T-104 | VERIFY DES... | TMT162 | 2012-02-03 | C:\Users\hni... | |
| 02 | T-104 | VERIFY DES... | TMT162 | 2013-10-01 | C:\Users\hni... | Round Blue |
| 03 | H-KEY1 | | UVU62UVUUV... | 2013-10-01 | C:\Users\hni... | Iwo Piece |
| 04 | P-101 | TEST UNIT .. | 3051 | 2013-10-01 | C:\Users\hni... | T Shape |
| 05 | RAD-WHA3 | TAG TEST 1 .. | _RAD_WHA | 2013-10-01 | C:\Users\hni... | wireless |

Device Tag:

Configuration File Tag: Enter new Tag if desired (8 Character Max)

LongTag/Description:

Config. File LongTag/Desc:

Device:

File Name:

Date:

Notes:

- 3 The available configurations are displayed. You can sort on each column by clicking it.
To get details about a configuration, select the desired configuration and double click it. The details will be displayed below.
- 4 You can change the desired Tag by editing the Configuration File Tag box. You can change the desired Description by editing the Config. File LongTag/Desc box.
- 5 Press the “Write” button to write device configuration. The device must be the same type as the configuration file. If they are different, the write operation will be aborted.
- 6 You can view the PDF file for the configuration file by double clicking on the desired configuration and pressing “View”.
- 7 You can delete configurations by double clicking on the desired configuration and pressing “Delete”.

6.10 Customizing PDF File Output

HART Device configurations can also be saved to disk as PDF Files to document the device. The header, footer, and technician name can be entered to customize the PDF file to make it into a configuration report.

To customize the PDF output, perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|---|
| 1 | Press the “PDF Setup” button on Document Device Dialog Box: |
|---|---|

Document Device

File Name: C:\ProgramFiles\ProComSol\DevCom2000\PDFTTest_1.txt

Notes:

"Notes" must be less than 250 characters.

Save Device Config PDF Setup Close

- | | |
|---|--|
| 2 | The PDF Setup Dialog box is displayed: |
|---|--|

PDF Setup

Header: User Manual Device Config

Footer: Footer for Device Config

Tech: Guy Instrument

PDF Text Scaling

Scale Value: 96

Note: Larger the value, the smaller the text.
96 is default value, use 120 on small screens.

OK Cancel

- | | |
|---|--|
| 3 | Enter data as needed and press OK. The data is saved for future configuration saves. |
| 4 | Below is a sample PDF file. |

Step Action

User Manual Device Config

DevCom2000, Rev 4.6, Device Configuration File

File: C:\Program Files\ProComSol\DevCom2000\TESTDEV_1-1.pdf
 Tag: TESTDEV
 LongTag/Desc: DEV DESC HERE
 Device ID: 1
 DD: 28/19/01/08
 Date (yyyy-mm-dd): 2011-02-17
 Time (hr-mn-sc): 03:58:57 PM
 Tech: Guy Instrument
 Notes: this is a saved device config

| Label | Value | Units |
|------------------|---------------------|-------|
| Xfer frctn | Linear | |
| AO | 0.00 | mA |
| AO alrm typ | Hi | |
| Unit | ohm | |
| Term temp unit | degR | |
| % rnge | 0.00 | |
| Term temp | 0.00 | degC |
| Term UpR Rng | 10.00 | degC |
| Term Lor Rng | 0.00 | degC |
| Term temp USL | 0.00 | degC |
| Term temp LSL | 0.00 | degC |
| Term temp damp | 0.00 | s |
| Diff min span | 0.00 | |
| Snsr1 | 0.00 | ohm |
| Snsr1 snsr s/n | 1 | |
| Snsr1 UpR Rng | 0.00 | ohm |
| Snsr1 Lor Rng | 0.00 | ohm |
| Snsr1 USL | 0.00 | ohm |
| Snsr1 LSL | 0.00 | ohm |
| Snsr1 damp | 0.00 | s |
| Snsr1 Min Span | 0.00 | ohm |
| Snsr 1 Type | Ohms | |
| Snsr 1 Conn | 2 Wire | |
| Meter typ | Eng unit | |
| Meter decimal pt | Floating decimal pt | |
| Meter bar graph | Bar graph off | |
| 50/60 Hz filter | 60 Hz | |
| Snsr 1 Cal Mode | Factory Trim | |

Footer for Dev Config

Page 1 of 3

6.11 License File Transfers

The license file can be transferred easily to other computers. The process is a “Check-In/Check-Out” process. When a license is on the computer, it is considered “Checked-Out”. When the license is on the license server, it is considered “Checked-In”. When the license is “Checked-in”, it can be “Checked-Out” by other users. This enables the license to be shared by many users.

6.11.1 Check-In

To Check-In the license from the current computer to the License Server, perform the following steps:

Step Action

- 1 Verify your PC is connected to the Internet.
- 2 Select “Check-In” from the “License” Menu.
 If the current computer is not licensed, an error message will appear. If licensed, the program will contact the License Server via the internet. It will check-in the license using the License ID and Password used in Activation. The current computer will

| Step | Action |
|------|---------------------------|
| | then become un-activated. |

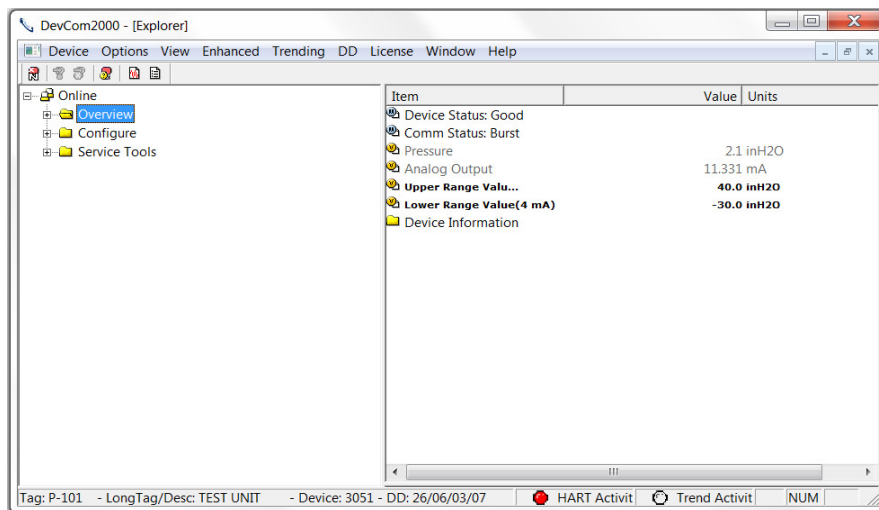
6.12 Options Menu

6.12.1 Options → Basic

6.12.1.1 Changing the COM port

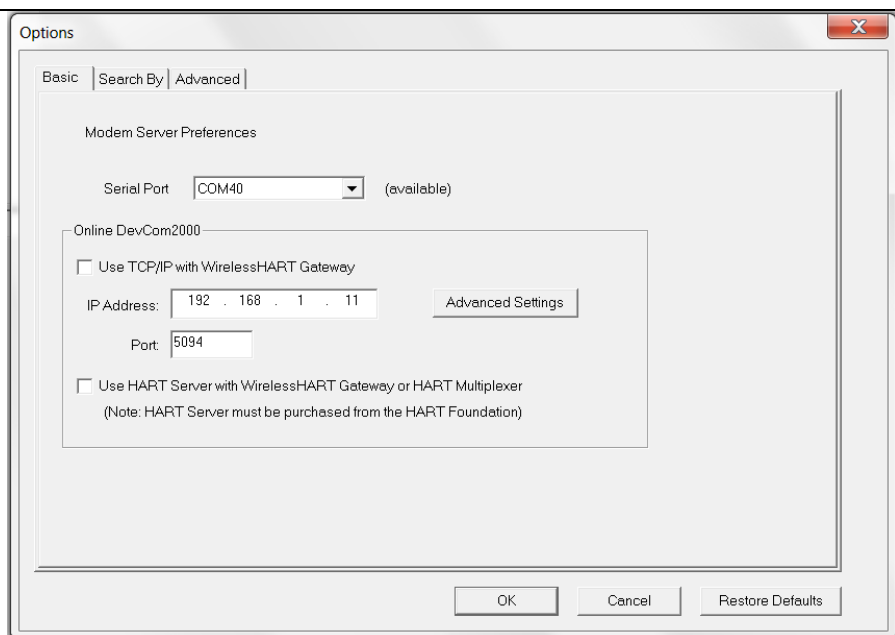
The **Basic** menu is used to set the COM port to the correct one that the device is connected to. To change the COM port, perform the following steps:

| Step | Action |
|------|---|
| 1 | Ensure that the application is running. |

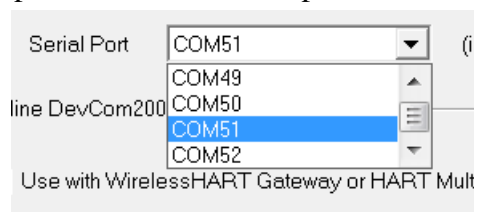


| | |
|---|--|
| 2 | Select Options → Basic from the main window. The Options Dialog Box is displayed with the Basic tab selected: |
|---|--|

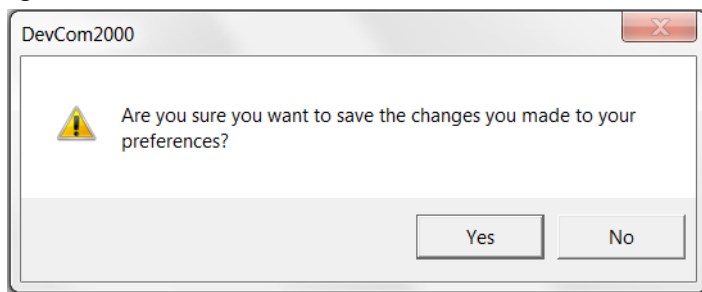
| Step | Action |
|------|--------|
|------|--------|



- To change serial ports, Click on the drop down box:



- Once the desired COM port is selected click OK to save the changed settings.
- Click Yes if you want to save the changes. Clicking No will not save the changes.



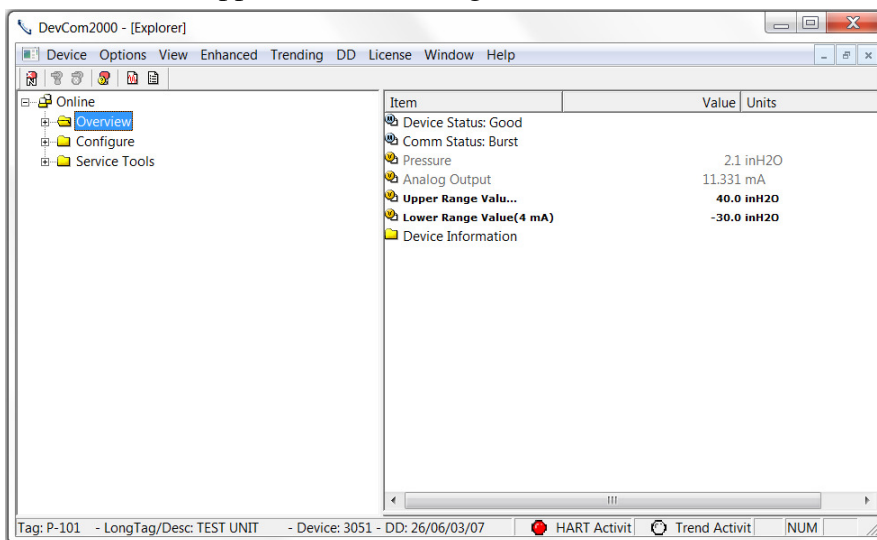
- Select New Device from the Main screen to connect using the new COM port.

6.12.1.2 Use HART-IP with a WirelessHART Gateway

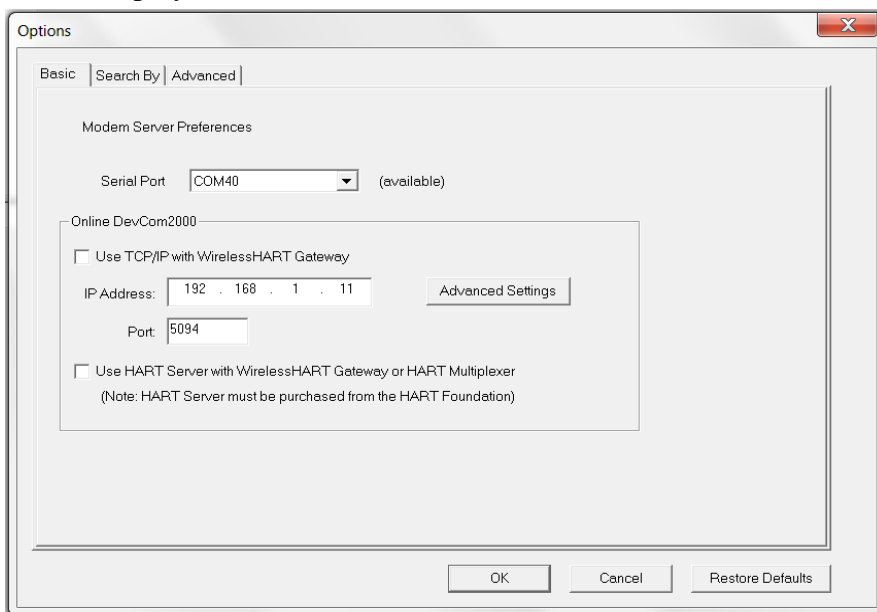
The **Basic** menu is where DevCom2000 can be set to use HART-IP to communicate with a *WirelessHART* Gateway. To communicate using HART-IP with *WirelessHART* Gateway, perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

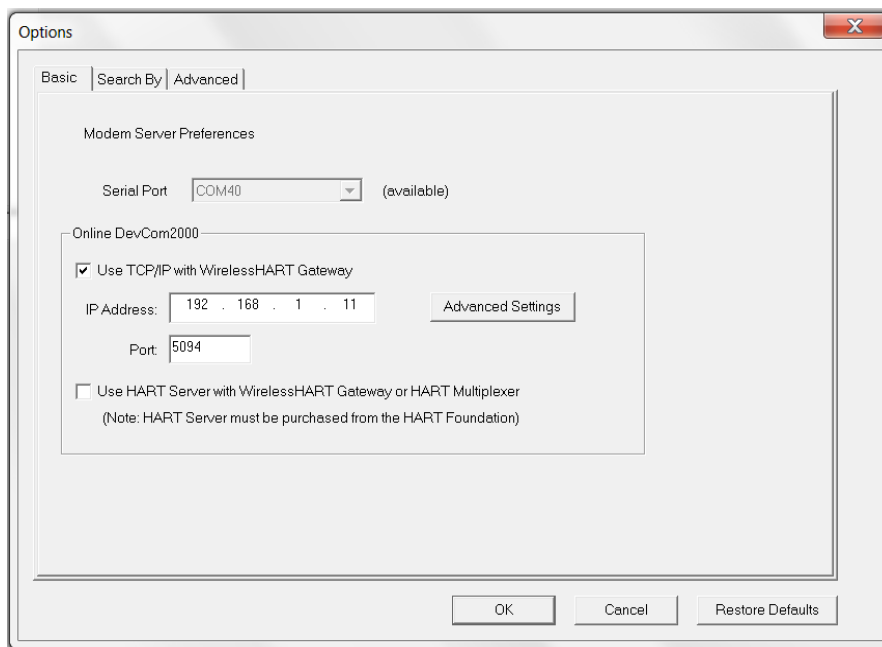
| | |
|---|---|
| 1 | Ensure that the application is running. |
|---|---|



| | |
|---|---|
| 2 | Select Options → Basic from the main window. The Options Dialog Box is displayed with the Basic tab selected: |
|---|---|



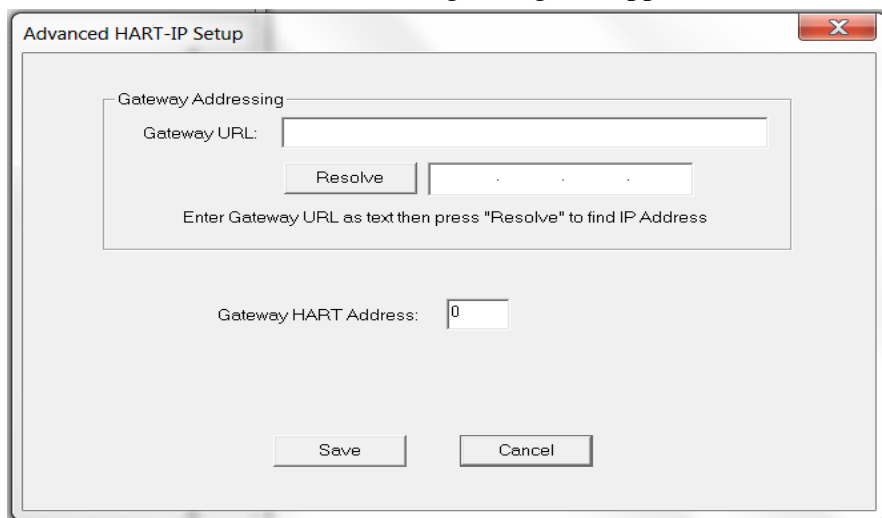
- | Step | Action |
|------|--|
| 3 | Click “Use TCP/IP with <i>WirelessHART Gateway</i> ” |



The Serial Port option will now be grayed out. **Un-checking** will make Serial Port selectable again.

- 4 Enter the IP Address of the WirelessHART Gateway in the IP Address Field. Also enter the Port assigned to HART-IP in the Gateway. It is typically 5094.

- 5 For more advanced settings related to HART-IP, click the “Advanced” button. The following dialog box appears:



Communicating to a WirelessHART Gateway via its URL

| Step | Action |
|------|--------|
|------|--------|

| | |
|--|---|
| | Enter a URL text address in the URL field and click the “Resolve” button to convert it into an IP Address. The IP Address will populate the IP Address box if a successful conversion occurs. |
|--|---|

Gateway Address

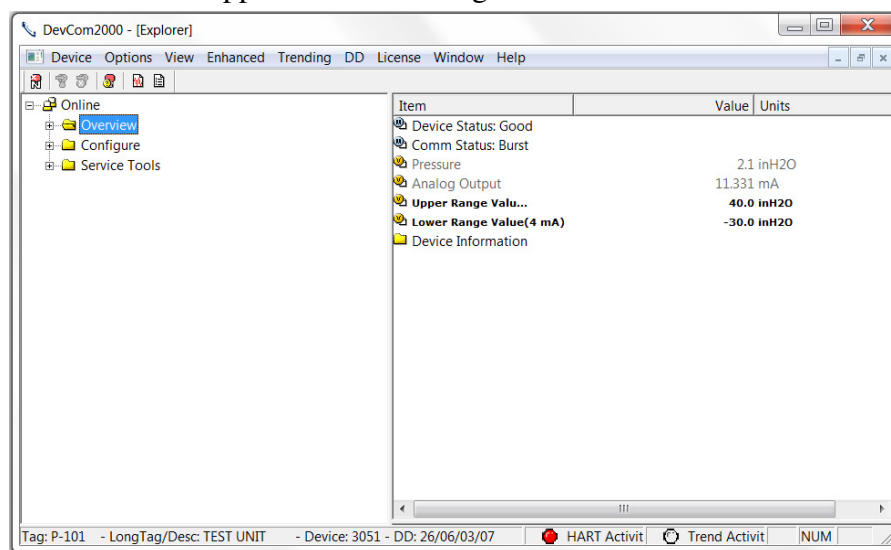
Some WirelessHART Gateways do not use the default address of 0. For these Gateways you must enter the correct Gateway Address in this field.

6.12.1.3 Using HART Server

The **Basic** menu is used to set DevCom2000 to communicate with a WirelessHART gateway or HART multiplexer. This requires an external program called HART Server. Although DevCom2000 can use HART Server for WirelessHART communications, it is recommended that HART-IP be used. To communicate with a WirelessHART Gateway or a HART multiplexer, perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|---|
| 1 | Ensure that the application is running. |
|---|---|



- | | |
|---|---|
| 2 | Select Options → Basic from the main window. The Options Dialog Box is displayed with the Basic tab selected: |
|---|---|

| Step | Action |
|------|--------|
|------|--------|

Options

Basic | Search By | Advanced

Modem Server Preferences

Serial Port: COM40 (available)

Online DevCom2000

☐ Use TCP/IP with WirelessHART Gateway

IP Address: 192 . 168 . 1 . 11 [Advanced Settings](#)

Port: 5094

☐ Use HART Server with WirelessHART Gateway or HART Multiplexer
(Note: HART Server must be purchased from the HART Foundation)

OK Cancel Restore Defaults

- Click “Use HART server with WirelessHART Gateway or HART Multiplexer”

Options

Basic | Search By | Advanced

Modem Server Preferences

Serial Port: COM40 (available)

Online DevCom2000

☐ Use TCP/IP with WirelessHART Gateway

IP Address: 192 . 168 . 1 . 11 [Advanced Settings](#)

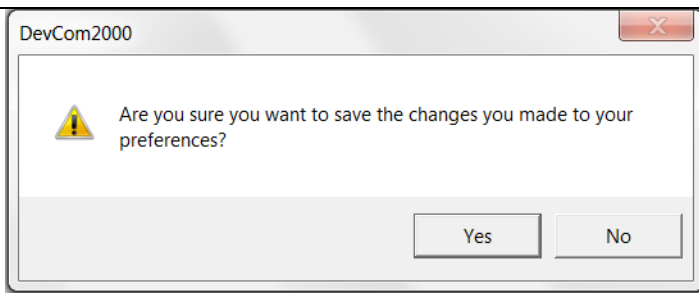
Port: 5094

☒ Use HART Server with WirelessHART Gateway or HART Multiplexer
(Note: HART Server must be purchased from the HART Foundation)

OK Cancel Restore Defaults

- The Serial Port option will now be grayed out. Un-checking will make Serial Port selectable again. Click OK to save the changed settings.
- Click Yes if you want to save the changes. Clicking No will not save the changes.

| Step | Action |
|------|--------|
|------|--------|



- | | |
|---|---|
| 6 | Restart DevCom2000 for the changes to take place. |
|---|---|

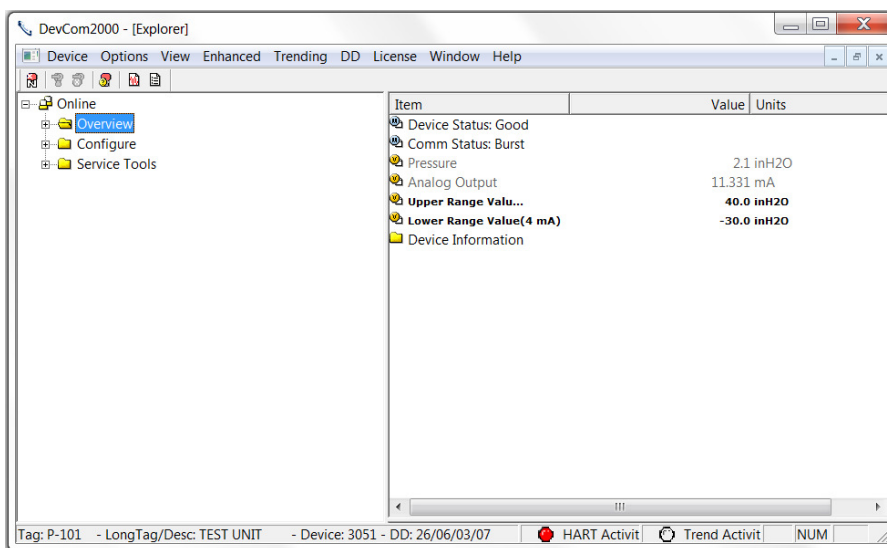
6.12.3 Options → Search

6.12.3.1 Poll Address

The **Search** menu is used to change how DevCom2000 searches for a Device. The first option is to search by Poll Address. This searches for a specific poll address or set of addresses. To search for a device using Poll Address perform these steps:

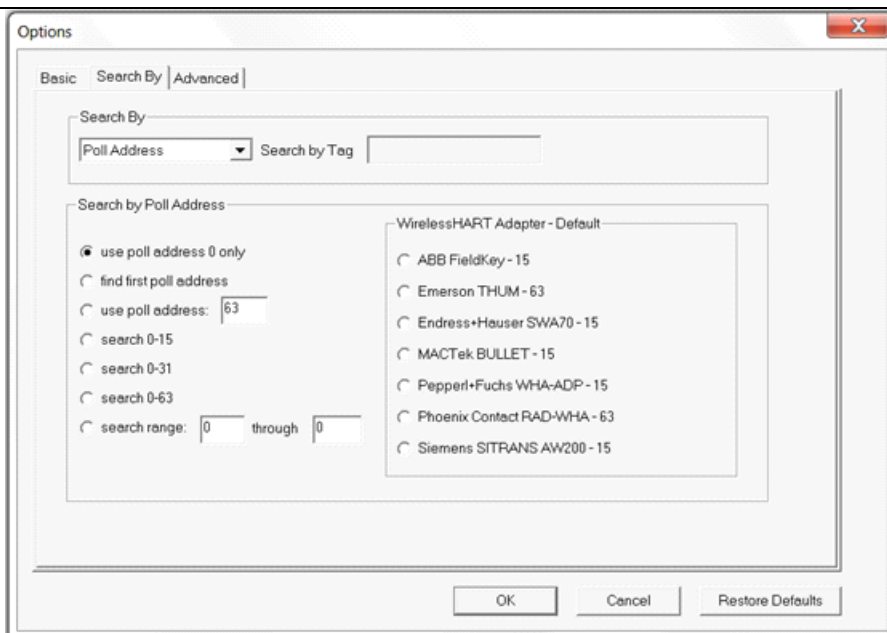
| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|---|
| 1 | Ensure that the application is running. |
|---|---|



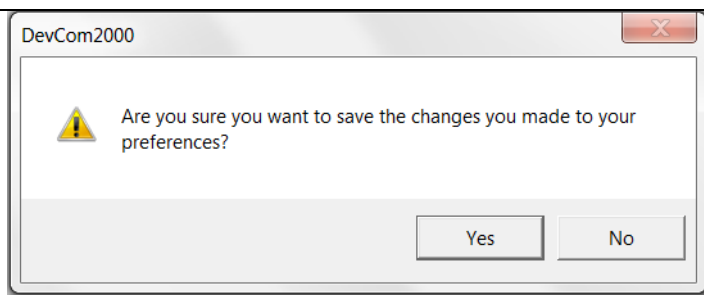
- | | |
|---|---|
| 2 | Select Options → Search from the main window. The Options Dialog Box is displayed with the Search By tab selected: |
|---|---|

| Step | Action |
|------|--------|
|------|--------|



- 3 There are currently nine options for Poll address:
 - “use poll address 0 only” only searches at poll address 0 before not finding a device. This is the default setting.
 - “find first poll address” searches poll addresses until it finds the first device it comes across.
 - “use poll address:___” If the poll address is know this options searches at a specific address (i.e. 5).
 - “search 0-15” searches poll addresses 0 through 15.
 - “search 0-31” searches poll addresses 0 through 31.
 - “search 0-63” searches poll addresses 0 through 63
 - “search range ___ through ___” searches between a user identified range of poll addresses.
 - “MACTek Bullet – 15” searches poll address 15.
 - “Emerson Process Management THUM - 63” searches poll address 63.
- 4 The Search by Tag option is grayed out when searching by poll address. Select a search by poll address option and Click OK to save the changed settings.
- 5 Click Yes if you want to save the changes. Clicking No will not save the changes.

| Step | Action |
|------|--------|
|------|--------|



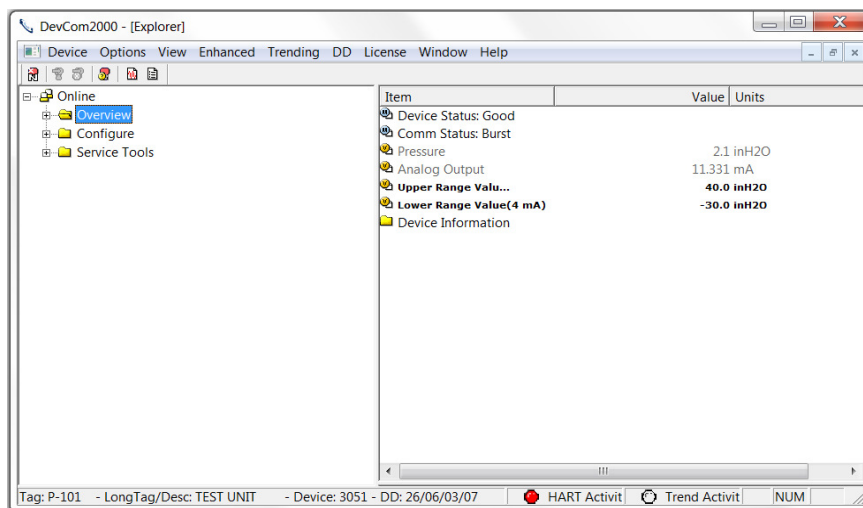
- | | |
|---|----------------------------|
| 6 | Reconnect to a new device. |
|---|----------------------------|

6.12.3.2 Short Tag

The **Search** menu can also be used to search by a specific Tag name or Description. To search for a device based on a Tag name or a Description, perform the following steps:

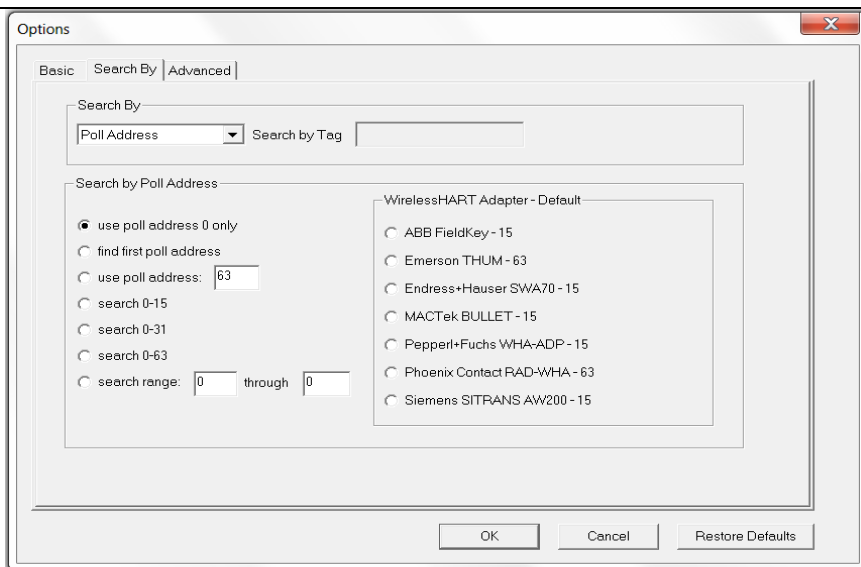
| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|---|
| 1 | Ensure that the application is running. |
|---|---|

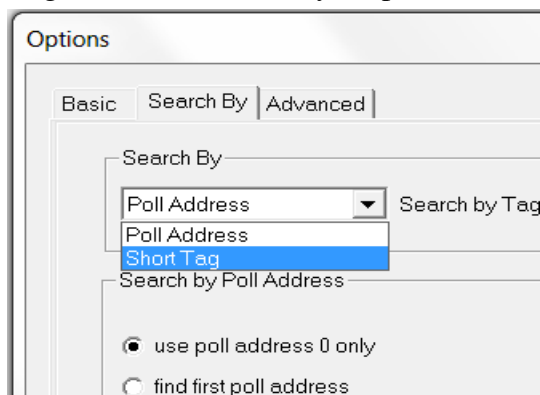


- | | |
|---|--|
| 2 | Select Options → Search from the main window. The Options Dialog Box is displayed with the Search By tab selected: |
|---|--|

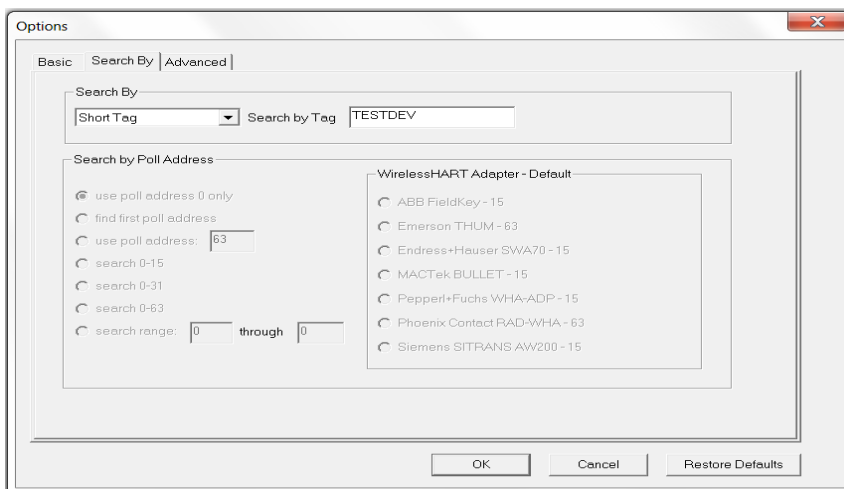
| Step | Action |
|------|--------|
|------|--------|



- 3 Select "Short Tag" from the Search By drop down box.



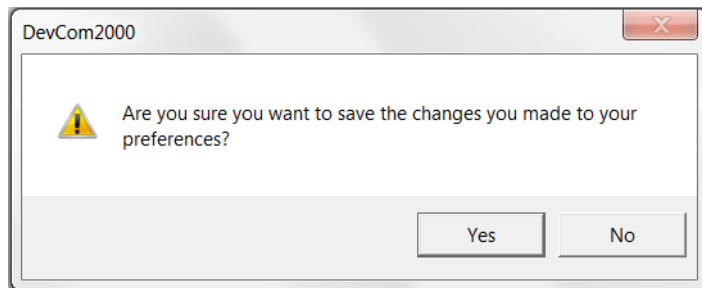
- 4 The poll address options will now be grayed out. Enter the tag to be searched for in the "Search by Tag" edit box.



| Step | Action |
|------|--------|
|------|--------|

| | |
|---|--|
| 5 | Click OK to save the changed settings. |
|---|--|

| | |
|---|---|
| 6 | Click Yes if you want to save the changes. Clicking No will not save the changes. |
|---|---|



| | |
|---|----------------------------|
| 7 | Reconnect to a new device. |
|---|----------------------------|

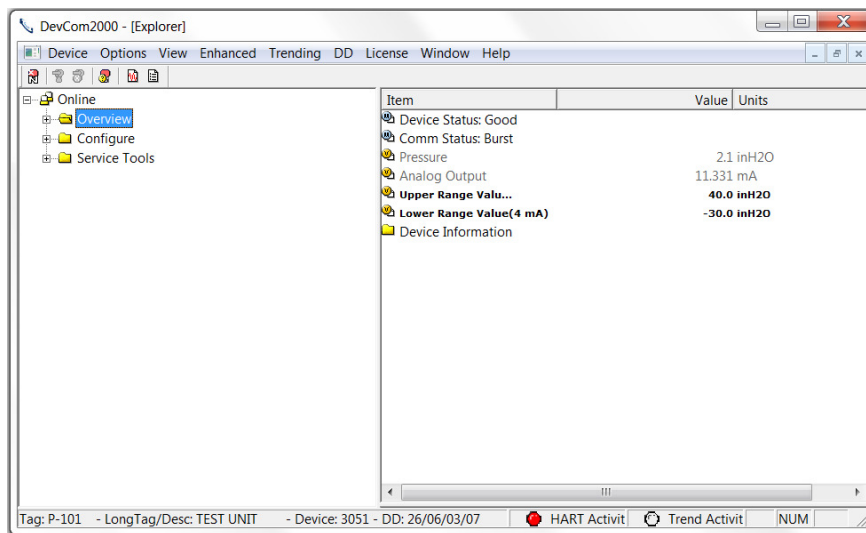
6.12.4 Options → Advanced

6.12.4.1 HART Master

The **Advanced** menu is used to change DevCom2000 settings. DevCom2000 can be a Primary or Secondary HART Master. To change the HART Master setting, perform the following steps:

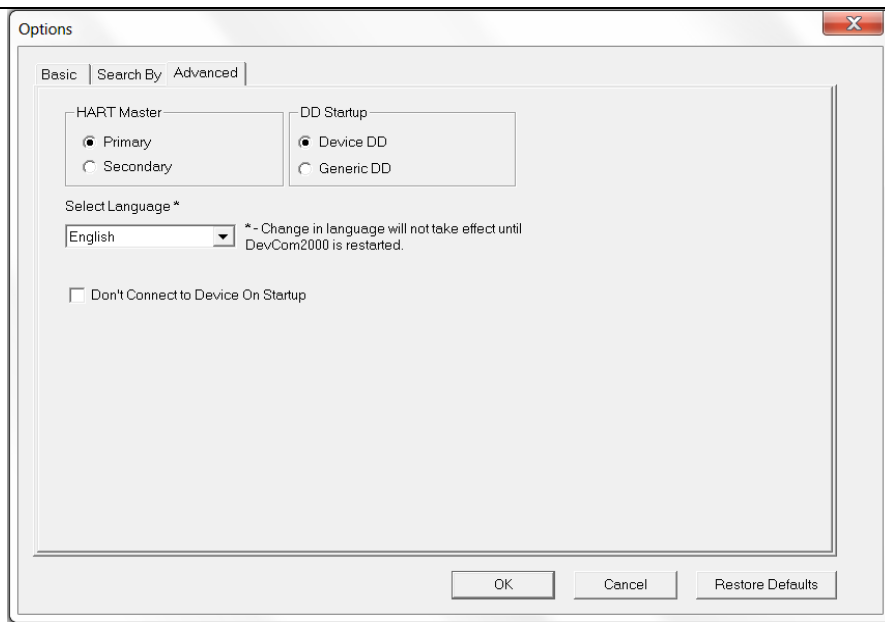
| Step | Action |
|------|--------|
|------|--------|

| | |
|---|---|
| 1 | Ensure that the application is running. |
|---|---|

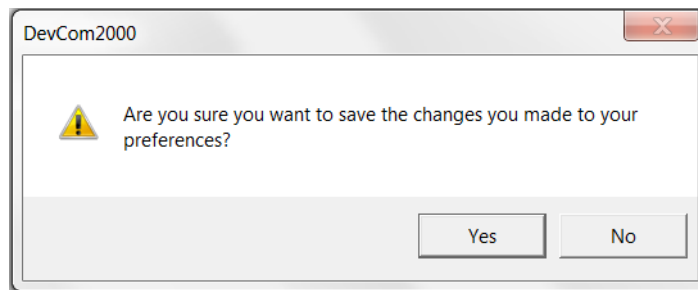


| | |
|---|--|
| 2 | Select Options → Advanced from the main window. The Options Dialog Box is displayed with the Advanced tab selected: |
|---|--|

| Step | Action |
|------|--------|
|------|--------|



- 3 Under the section “HART Master” select either “Primary” or “Secondary”.
- 4 Click OK to save the changed settings.
- 5 Click Yes if you want to save the changes. Clicking no will not save the changes.



- 6 Restart DevCom2000 for the changes to take place.

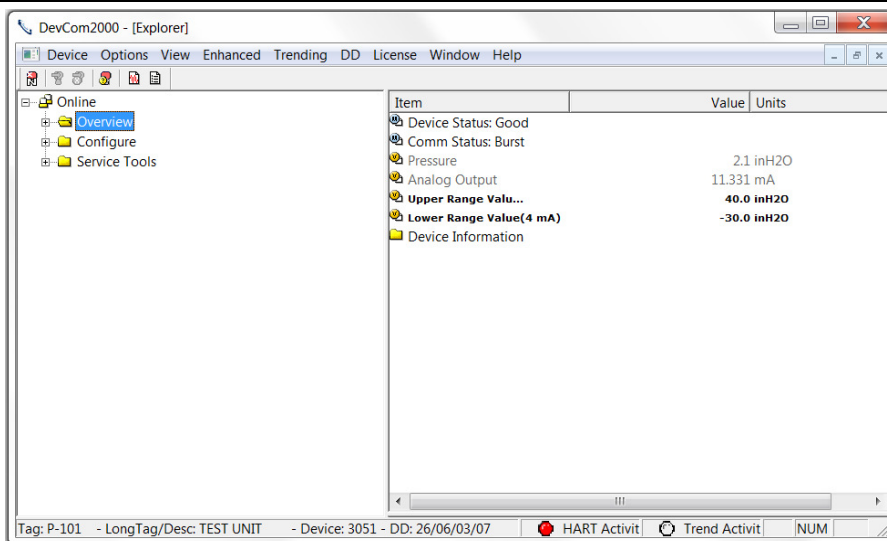
6.12.4.2 Language

Certain DD’s can be used in different languages. English is the default setting but some support other languages. Note that main program frame will always be English. Only the DD based items – menus, variables, etc. will change language. And will only change if the DD supports that language. In order to change the Language setting, perform the following steps:

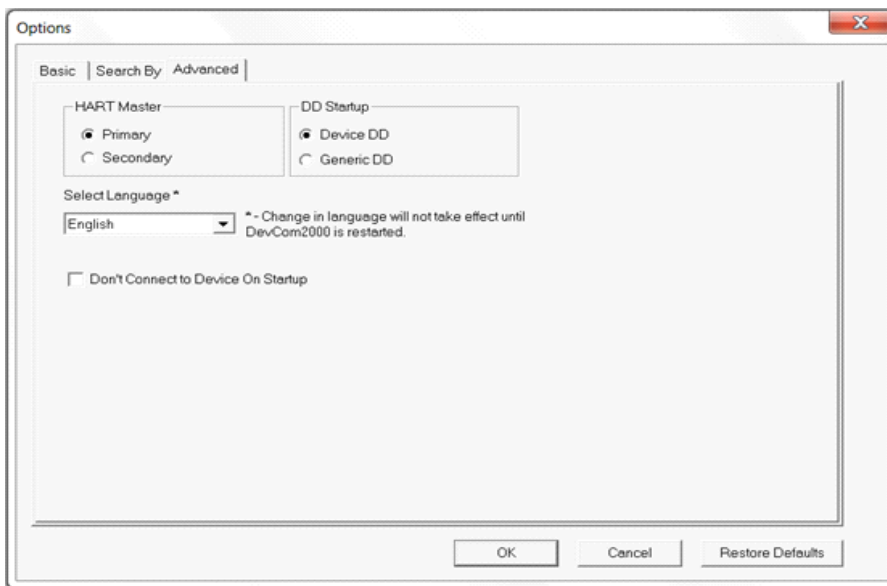
| Step | Action |
|------|--------|
|------|--------|

- 1 Ensure that the application is running.

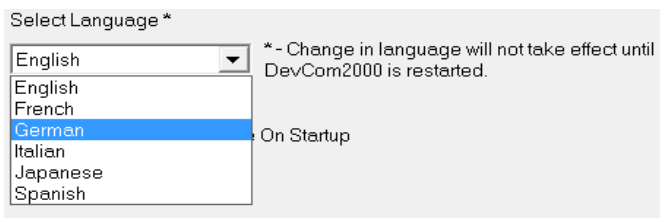
Step Action



- 2 Select **Options** → **Advanced** from the main window. The Options Dialog Box is displayed with the Advanced tab selected:

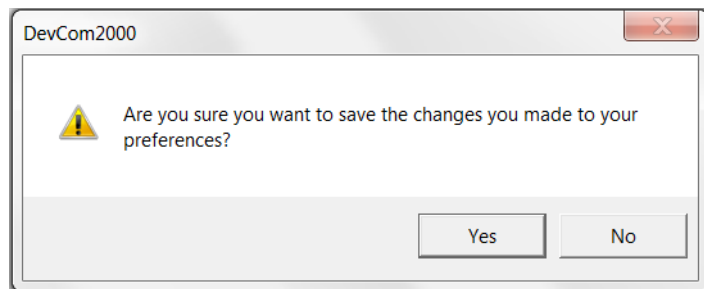


- 3 Click the “Select Language” drop down to select a different language.



| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|--|
| 4 | Select a language to translate the DD into. Click Okay to save the changed settings. |
| 5 | Click Yes if you want to save the changes. Clicking no will not save the changes. |



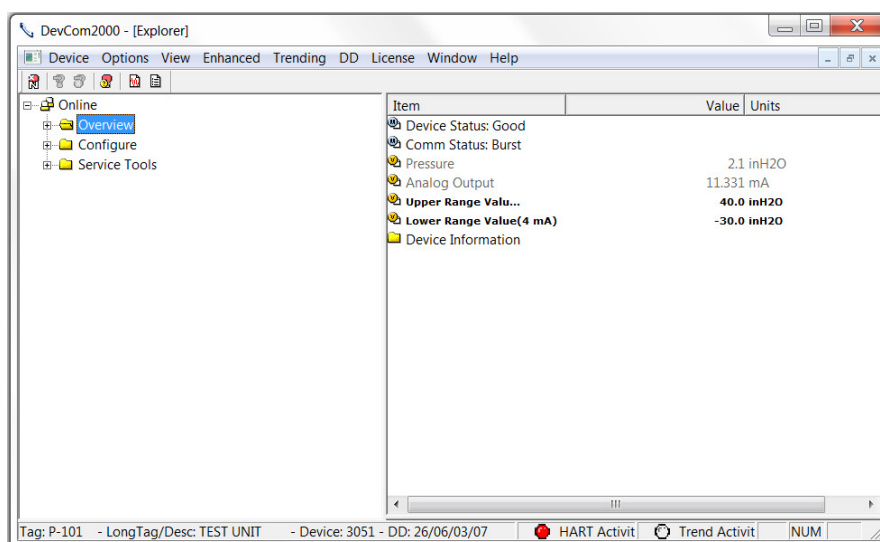
- | | |
|---|---|
| 6 | Restart DevCom2000 for the changes to take place. If the language is supported the DD will be translated. If not, the DD with default to English. |
|---|---|

6.12.4.3 DD Startup

During normal startup of DevCom2000, the device is found and then the DD is loaded. If the DD cannot be found then a generic DD is loaded. **Advanced** has settings that can change what DD DevCom2000 loads with loading a device. To load a generic DD at start up or to not load a DD at all perform the following steps:

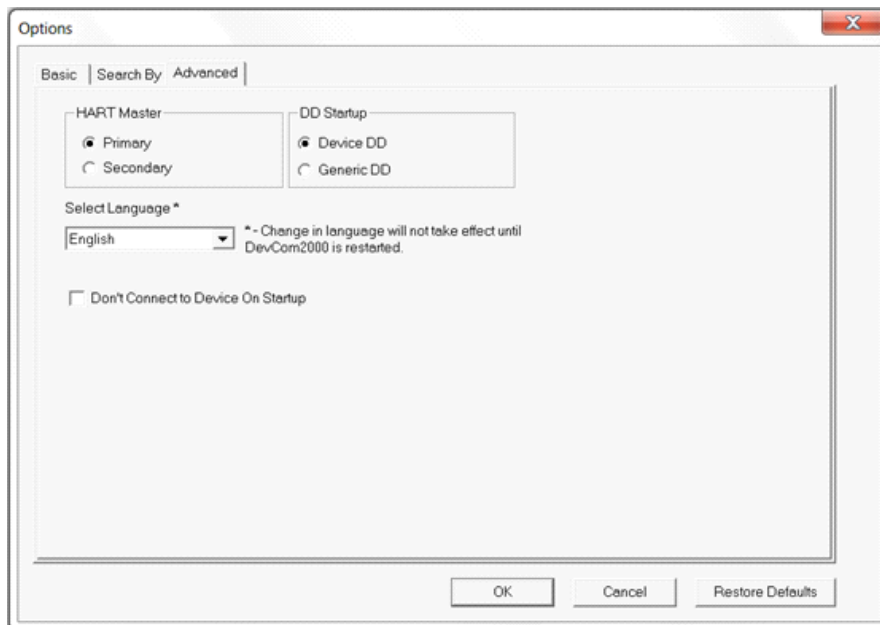
| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|---|
| 1 | Ensure that the application is running. |
|---|---|

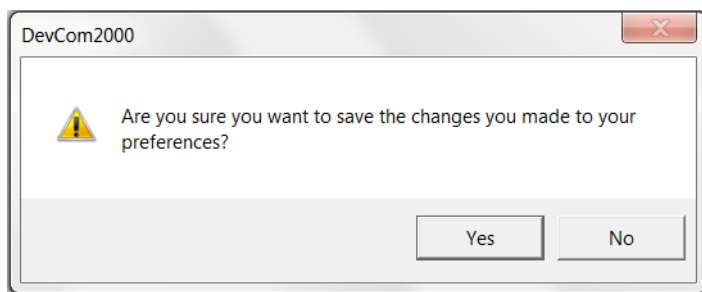


| Step | Action |
|------|--------|
|------|--------|

- 2 Select **Options** → **Advanced** from the main window. The Options Dialog Box is displayed with the Advanced tab selected:

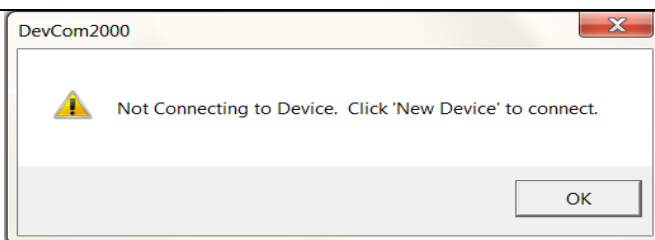


- 3 Click either “Device DD” or “Generic DD” depending on which DD is to be loaded when connecting to a device.
- 4 Check the “Don’t Connect to Device On Startup” to start DevCom2000 without connecting to a device. Clicking “New Device” will connect to a device after this start up.
- 5 Click OK to save the changed settings.
- 6 Click Yes if you want to save the changes. Clicking no will not save the changes.



- 7 Restart DevCom2000 for the changes to take place.
- 8 If “Don’t Connect to Device On Startup” is checked the following message will be displayed on start up:

| Step | Action |
|------|--------|
|------|--------|

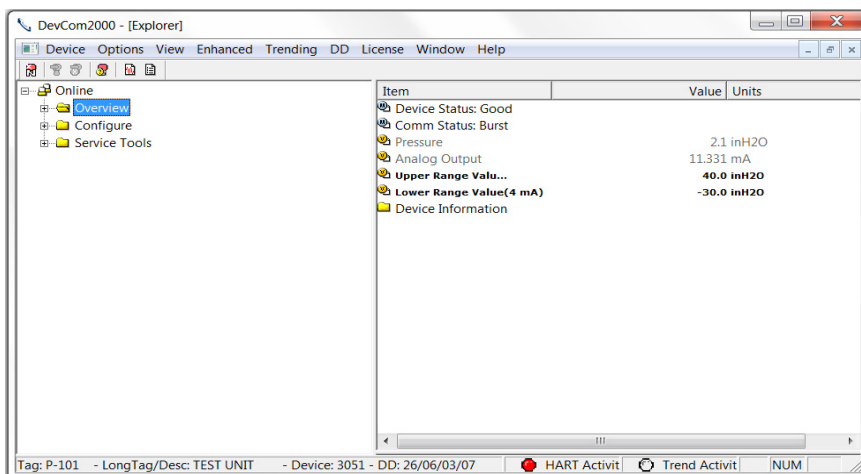


6.12.4.4 Default Settings

The “Default” button on the **Advanced** tab **Options** resets all the advanced options to their default settings. To return the settings to their default settings perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

- 1 Ensure that the application is running.



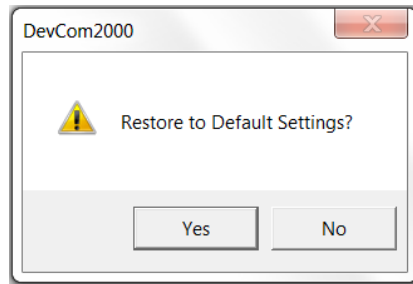
- 2 Select **Options** → **Advanced** from the main window. The Options Dialog Box is displayed with the Advanced tab selected:



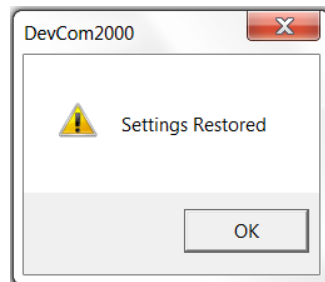
| Step | Action |
|------|--------|
|------|--------|

| | |
|---|--------------------------------------|
| 3 | Click the “Restore Defaults” button. |
|---|--------------------------------------|

| | |
|---|--|
| 4 | DevCom2000 will ask if you want to restore the default settings. Click “Yes” |
|---|--|

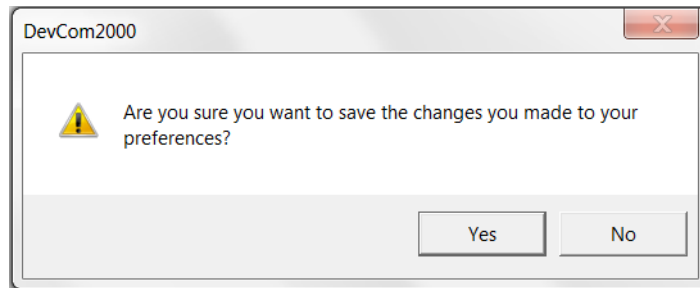


| | |
|---|---|
| 5 | If the restore was successful the following dialog box will be shown: |
|---|---|



| | |
|---|--|
| 6 | Click OK to save the changed settings. |
|---|--|

| | |
|---|---|
| 7 | Click Yes if you want to save the changes. Clicking no will not save the changes. |
|---|---|



| | |
|---|---|
| 8 | Restart DevCom2000 for the changes to take place. |
|---|---|

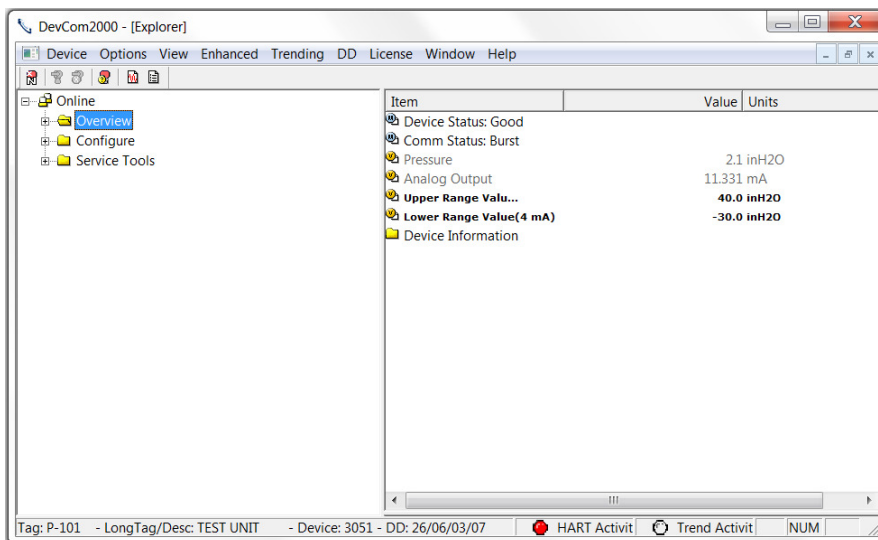
6.13 Trending

6.13.1 Define Trend

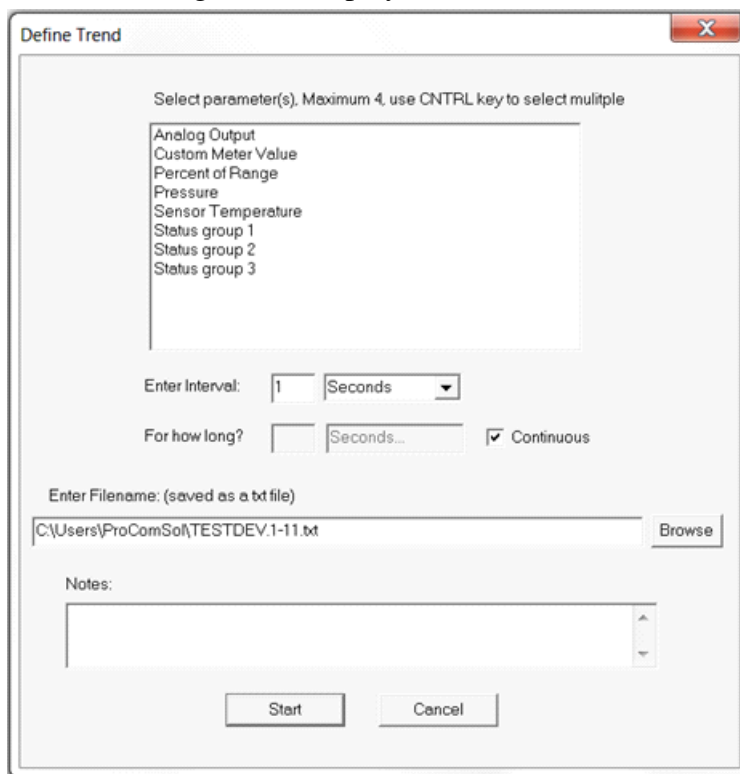
The **Trending** menu is used to track dynamic device parameters over a specified period of time. Once a parameter is tracked, it can be graphed and compared against other parameters tracked on the same time period. Before a parameter can be graphed, a trend must first be created. To create a trend, perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|--|
| 1 | Ensure that the application is running and is connected to a device. |
|---|--|



- | | |
|---|---|
| 2 | Select Trending → Define Trend from the main window. The Define Trend Dialog Box is displayed: |
|---|---|



- | | |
|---|--|
| 3 | <p>Select the information for the log file:</p> <p>Select Parameters – Select up to four parameters to log at a time. Press the CNTRL key to select multiple parameters.</p> <p>Enter Interval - Input a number and select an interval from the drop</p> |
|---|--|

| Step | Action |
|------|--------|
|------|--------|

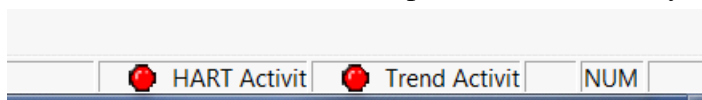
down box, i.e. Seconds, Minutes, Hours, Days.

For How Long? – Input duration for how long to log the parameter(s). This part will be grayed out if the “Continuous” check box is selected. Unselect it for a finite duration.

Filename – The default directory is based on Windows User Accounts however a log file can be saved anywhere.

Notes – The section can only be 250 characters long.

- | | |
|---|--|
| 4 | Click the “Start” button to start logging. |
| 5 | The logging will then be started. At the lower right hand corner of DevCom2000 the “Trend Activity” light will come on. This indicates that there is logging going on. You cannot start another log until this one is finished or the user stops the trend manually. |

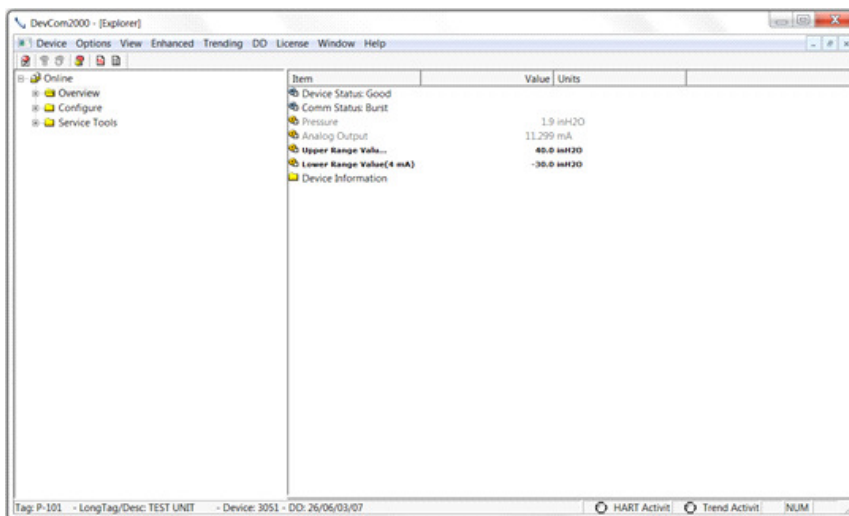


6.13.2 View Current Trend

When a trend is created DevCom2000 creates a window that shows the graph of the current trend. To view this trend, perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

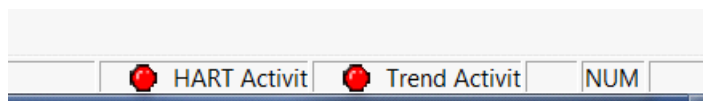
- | | |
|---|--|
| 1 | Ensure that the application is running and is connected to a device. |
|---|--|



- | | |
|---|---|
| 2 | Ensure that a trend is in progress. The “Trend Activity” light at the bottom of the screen is on if a trend is in progress. If not then the |
|---|---|

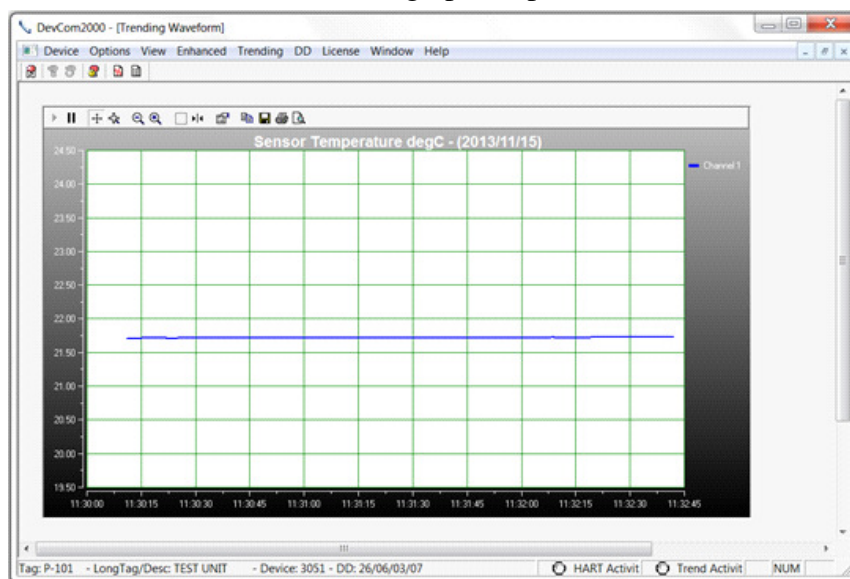
| Step | Action |
|------|--------|
|------|--------|

| | |
|--|--------------------|
| | light will be off. |
|--|--------------------|



| | |
|---|--|
| 3 | Select Trending → View Current Trend from the main window. |
|---|--|



| | |
|---|--|
| 4 | The DevCom2000 Trend dialog opens up. |
|---|--|





The user can manipulate the graph as desired. “Tracking” is the term used to describe how the graph control follows the data, changing the axis in real time so that all of the data is shown. Below are the specific parts of the graph:

Tool Bar: There are multiple things that the user can do with the graph.





Resume All Tracking: The “Resume All” button -  - is grayed out while tracking. If either axis is changed or the “Pause” button is pressed, this will become green -  - Pressing “Resume All Tracking” will resume the tracking on the graph.


Pause All Tracking: The “Pause” button -  - pauses the graph in its current state. Data is still added, however the current X-axis and Y-axis spans no longer change. Pressing the “Resume” button will continue tracking.


Scroll Axis: This is the default way to scroll both the X and Y-axis. The “Scroll Axis” button -  - allows the user to scroll in both directions on the graph.


| Step | Action |
|------|--------|
|------|--------|

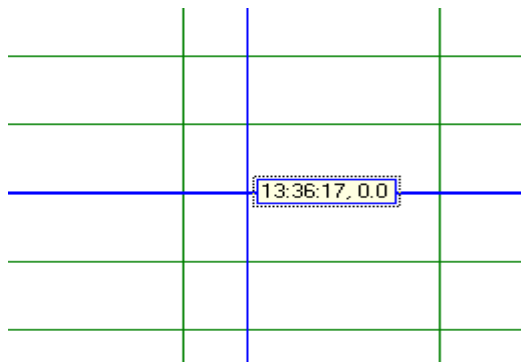
| | |
|--|---|
| | <p><u>Zoom Axis</u>: The “Zoom Axis” button -  - allows the user to shrink or enlarge the scale of either axis. By moving up or down, left or right, the span of each axis is changed.</p> |
|--|---|


| | |
|--|--|
| | <p><u>Zoom Out All Axis</u>: The “Zoom Out All Axis” button -  - zooms out both the X-axis and Y-axis at the same time giving the user a broader look at the graph.</p> |
|--|--|

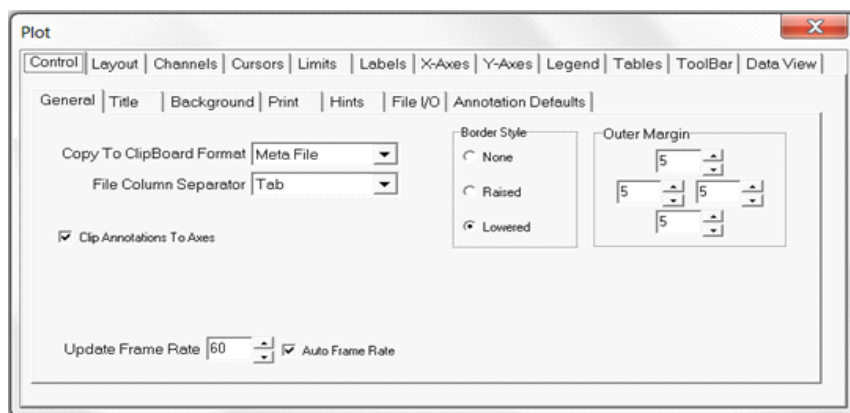
| | |
|--|---|
| | <p><u>Zoom In All Axis</u>: The “Zoom In All Axis” button -  - zooms in both the X-axis and Y-axis at the same time giving the user view over a smaller time period.</p> |
|--|---|

| | |
|--|---|
| | <p><u>Zoom Box</u>: The “Zoom Box” button -  - changes the cursor allowing the user to select a specific area of the graph to zoom in on for a more detailed look.</p> |
|--|---|


| | |
|--|--|
| | <p><u>Cursor</u>: The “Cursor” button -  - adds a cursor to the screen that gives the coordinates of the graph at a certain time. Clicking and moving the cursor can give the coordinates of any point on the graph. See below for an example of using the “Cursor” tool:</p> |
|--|--|



| | |
|--|--|
| | <p><u>Properties</u>: The “Properties” button -  - brings up the “Properties” dialog box which gives the user the ability to customize the graph as desired. Below is an example of one of the “Properties” tabs:</p> |
|--|--|




| Step | Action |
|------|--------|
|------|--------|

| | |
|--|---|
| | <p>Copy To Clipboard: The “Copy To Clipboard” button -  - copies the graph to the clipboard to allow the graph to be pasted into documents like a report.</p> |
|--|---|

| | |
|--|---|
| | <p>Save: The “Save” button -  - saves the graph as a “*.bmp”.</p> |
|--|---|

| | |
|--|---|
| | <p>Print: The “Print” button -  - prints the graph.</p> |
|--|---|

| | |
|--|---|
| | <p>Preview: The “Preview” button -  - gives a print preview of the graph.</p> |
|--|---|

Title: The title gives the name of the parameter being trended, the units that the parameter is being measured in, and the date(s) of the graph.

(Parameter) (Units) - (Date)

Pressure inH2O - (2011/03/14)

Axis: The Y-axis is the units of the parameter. The X-axis is the time in HH:MM:SS format.

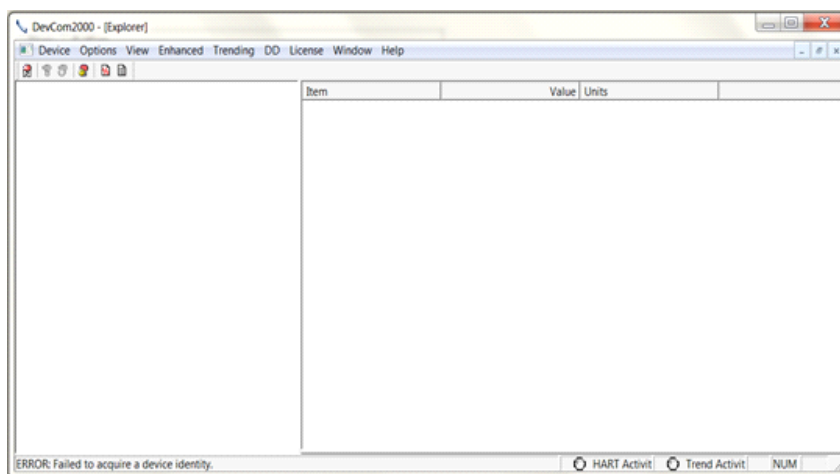
Redraw: This section is disabled for **View Current Trend**.

6.13.3 View Past Trends

DevCom2000 keeps a list of trends that have been done in the past. These trends are saved so that they can be viewed at a later date. To select a trend to be viewed perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|--|
| 1 | Ensure that the application is running, you do not have to be connected to a device to use View Past Trends . |
|---|--|



- | | |
|---|--|
| 2 | Select Trending → View Past Trends from the main window. |
| 3 | The Select Trend To Graph dialog will open. |

Step Action

| N | Tag | LongTag/Desc | Device | Date | Start Time | File | Notes |
|----|--------|----------------|---------|------------|------------|------------------|-------|
| 01 | T-101 | TEST | 1106744 | 2013-09-30 | 15:40:24 | C:\Users\shni... | |
| 02 | T-101 | TEST | 1106744 | 2013-09-30 | 15:44:51 | C:\Users\shni... | |
| 03 | T-101 | TEST | 1106744 | 2013-09-30 | 15:57:18 | C:\Users\shni... | |
| 04 | T-101 | TEST | 1106744 | 2013-09-30 | 16:42:39 | C:\Users\shni... | |
| 05 | T-104 | VERIFY DESC... | 3342378 | 2013-10-01 | 10:12:08 | C:\Users\shni... | |
| 06 | T-104 | VERIFY DESC... | 3342378 | 2013-10-01 | 10:15:48 | C:\Users\shni... | |
| 07 | POKEY1 | | 7451130 | 2013-10-01 | 10:31:31 | C:\Users\shni... | |

This dialog box is very similar to the “Download/View” dialog box.

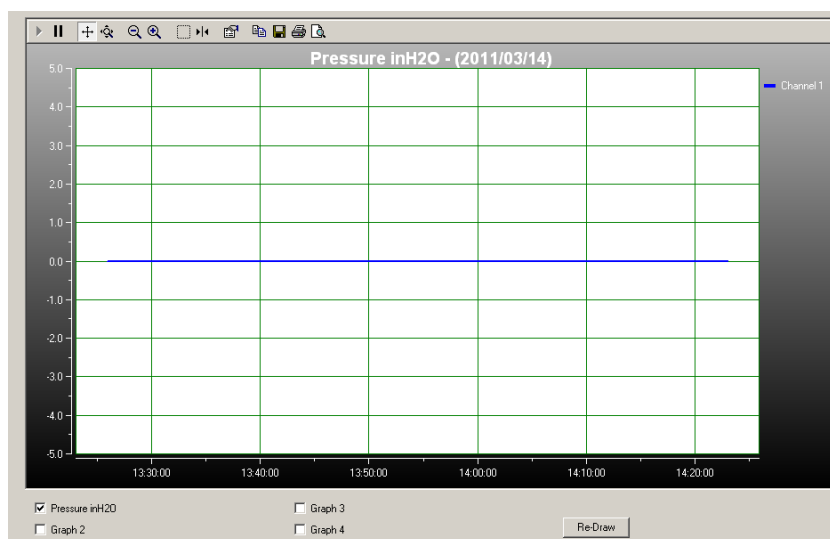
Data: Opens the text file where the data has been saved.

Delete: Deletes a previous trend from the database.

Close: Closes the dialog box.

Trend: Opens the saved Trend and displays it graphically. Select a trend to graph and click “Trend”.

- The **DevCom2000 Trend** dialog opens up when “Trend” is selected.





The user can manipulate the graph as desired. “Tracking” is the term used to describe how the graph control follows the data,


| Step | Action |
|------|--------|
|------|--------|


| | |
|--|--|
| | <p>changing the axis in real time so that all of the data is shown. Below are the specific parts of the graph:</p> |
|--|--|


| | |
|--|--|
| | <p>Tool Bar: There are multiple things that the user can do with the graph.</p> |
|--|--|





| | |
|--|---|
| | <p><u>Resume All Tracking:</u> The “Resume All” button -  - is grayed out while tracking. If either axis is changed or the “Pause” button is pressed, this will become green -  - Pressing “Resume All Tracking” will resume the tracking on the graph.</p> |
|--|---|


| | |
|--|---|
| | <p><u>Pause All Tracking:</u> The “Pause” button -  - pauses the graph in its current state. Data is still added, however the current X-axis and Y-axis spans no longer change. Pressing the “Resume” button will continue tracking.</p> |
|--|---|


| | |
|--|---|
| | <p><u>Scroll Axis:</u> This is the default way to scroll both the X and Y-axis. The “Scroll Axis” button -  - allows the user to scroll in both directions on the graph.</p> |
|--|---|

| | |
|--|--|
| | <p><u>Zoom Axis:</u> The “Zoom Axis” button -  - allows the user to shrink or enlarge the scale of either axis. By moving up or down, left or right, the span of each axis is changed.</p> |
|--|--|

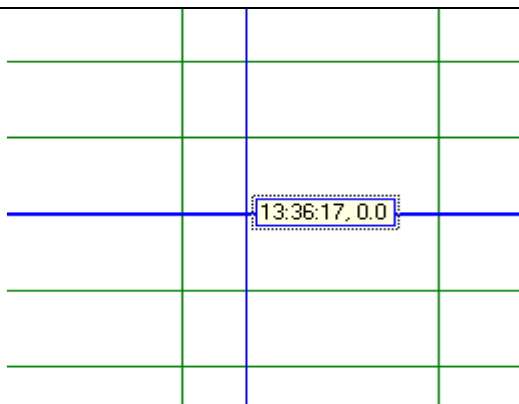
| | |
|--|--|
| | <p><u>Zoom Out All Axis:</u> The “Zoom Out All Axis” button -  - zooms out both the X-axis and Y-axis at the same time giving the user a broader look at the graph.</p> |
|--|--|


| | |
|--|--|
| | <p><u>Zoom In All Axis:</u> The “Zoom In All Axis” button -  - zooms in both the X-axis and Y-axis at the same time giving the user view over a smaller time period.</p> |
|--|--|

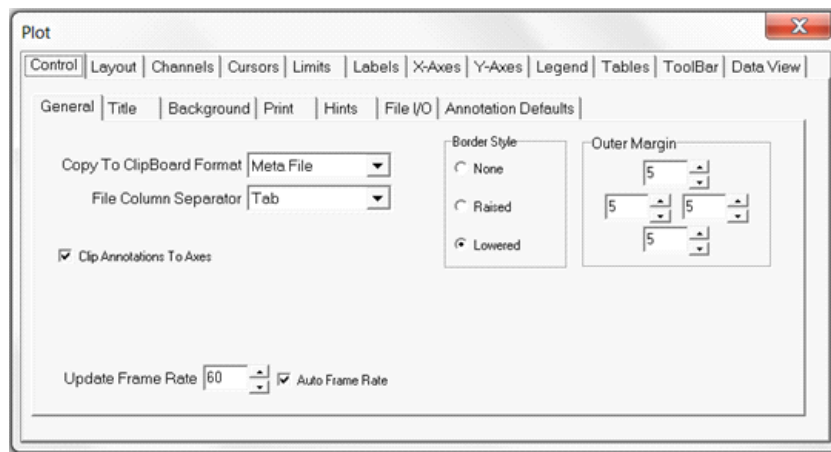
| | |
|--|---|
| | <p><u>Zoom Box:</u> The “Zoom Box” button -  - changes the cursor allowing the user to select a specific area of the graph to zoom in on for a more detailed look.</p> |
|--|---|


| | |
|--|--|
| | <p><u>Cursor:</u> The “Cursor” button -  - adds a cursor to the screen that gives the coordinates of the graph at a certain time. Clicking and moving the cursor can give the coordinates of any point on the graph. See below for an example of using the “Cursor” tool:</p> |
|--|--|

Step Action





Properties: The “Properties” button -  - brings up the “Properties” dialog box which gives the user the ability to customize the graph as desired. Below is an example of one of the “Properties” tabs:



Copy To Clipboard: The “Copy To Clipboard” button -  - copies the graph to the clipboard to allow the graph to be pasted into documents like a report.

Save: The “Save” button -  - saves the graph as a “*.bmp”.

Print: The “Print” button -  - prints the graph.

Preview: The “Preview” button -  - gives a print preview of the graph.

Title: The title gives the name of the parameter being trended, the units that the parameter is being measured in, and the date(s) of the graph.

(Parameter) (Units) - (Date)

Pressure inH2O - (2011/03/14)

Axis: The Y-axis is the units of the parameter. The X-axis is the time in HH:MM:SS format.

| Step | Action |
|------|--------|
|------|--------|

Redraw: Up to four parameters can be trended at the same time. By clicking the check box for a parameter u can show one or four at the same time for easy comparison over a period of time.

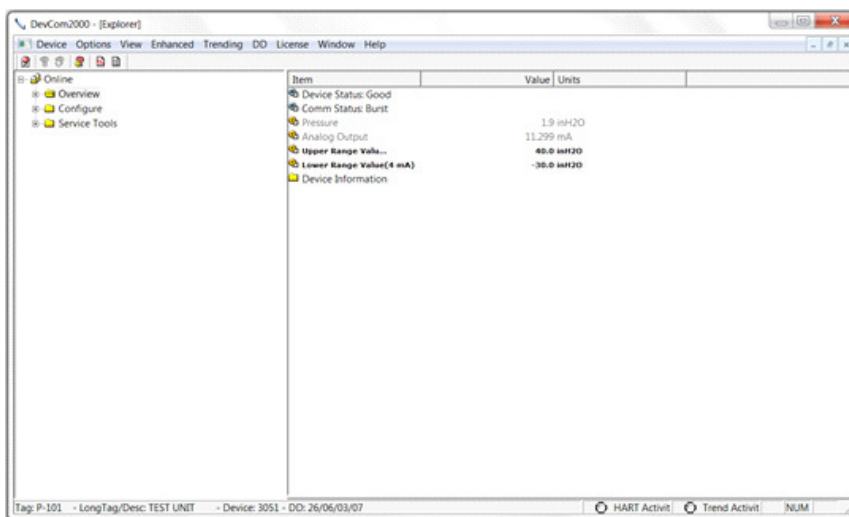
| | |
|--|----------------------------------|
| <input checked="" type="checkbox"/> Pressure inH2O | <input type="checkbox"/> Graph 3 |
| <input type="checkbox"/> Graph 2 | <input type="checkbox"/> Graph 4 |

Click “Redraw” and the parameters checked will be shown.

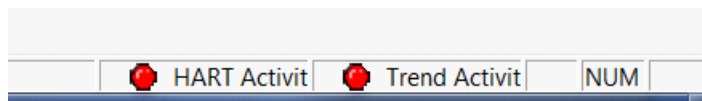
6.13.4 Stop Current Trend

| Step | Action |
|------|--------|
|------|--------|

- 1 Ensure that the application is running and is connected to a device.

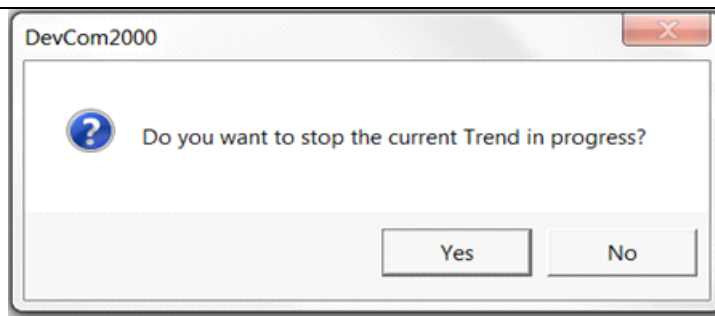


- 2 Ensure that a trend is in progress. The “Trend Activity” light at the bottom of the screen is on if a trend is in progress. If not then the light will be off.

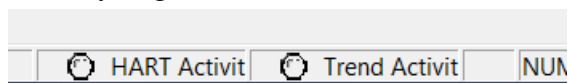


- 3 Select **Trending** → **Stop Current Trend** from the main window.
- 4 You will be asked if you want to stop the current trend. Click “Yes”. This will stop the current trend.

| Step | Action |
|------|--------|
|------|--------|



- | | |
|---|---|
| 5 | The “Trend Activity” light will now be off. |
|---|---|



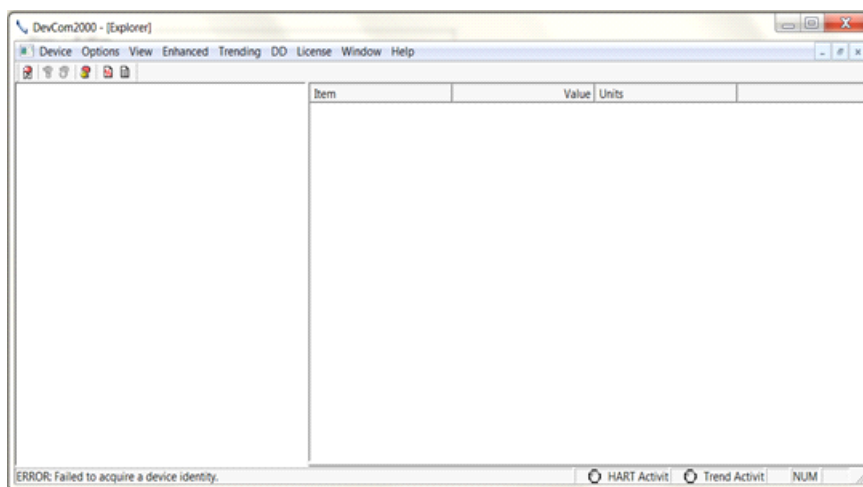
6.14 DD Functions

6.14.1 Adding a DD

DevCom2000 allows the user to add a DD to the library when necessary. Each DD must be in its appropriate destination for DevCom2000 to find the DD. The format is: “C:\HCF\DDL\Library\xxxxxx\yyyy\” where “xxxxxx” represents the manufacturer ID and “yyyy” represents the device ID. The user does not need to add the directory structure, DevCom2000 does that automatically. To add a DD perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|--|
| 1 | Ensure that the application is running, you do not have to be connected to a device to use Add DD . |
|---|--|



- | | |
|---|---|
| 2 | Select DD → Add DD from the main window. |
| 3 | The Add DD dialog will open. |

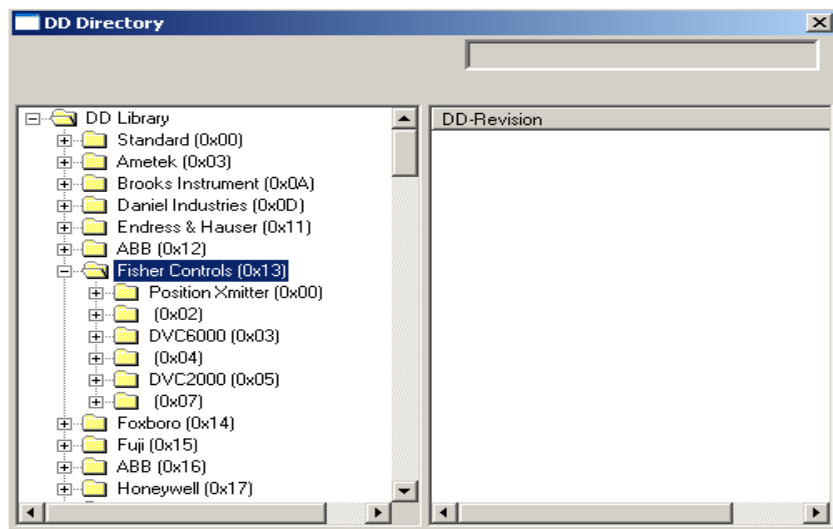
| Step | Action |
|------|--------|
|------|--------|

- 4 Click “Browse” and go to the location of the DD that is to be added.
- 5 The “DD Info” section will be populated. Confirm that it is the correct DD. Below is an example of 0000c2/0021/0201.fm6:

- 6 Input a “Label” for the DD if necessary. If not Click “Add DD” to add the DD to the library.

6.14.2 Updating a DD Label

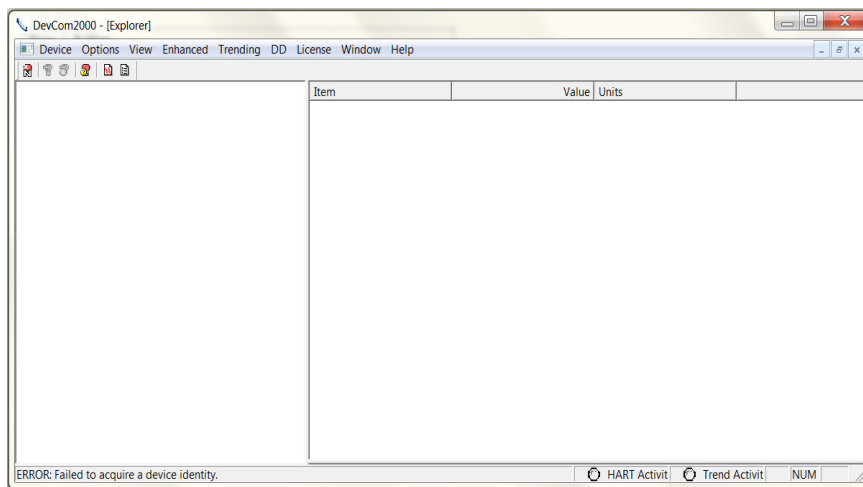
DevCom2000 allows the user to add a Label for a DD if there is not one already defined. Below is an example:



The manufacturer ID of Fisher Controls is 000013. Device IDs 0002, 0004, and 0007 all do not have a label. This is when updating a DD label is useful. To update the label perform the following steps:

| Step | Action |
|------|--------|
|------|--------|

- | | |
|---|--|
| 1 | Ensure that the application is running, you do not have to be connected to a device to use Add DD . |
|---|--|



- | | |
|---|---|
| 2 | Select DD → Add DD from the main window. |
| 3 | The Add DD dialog will open. |

| Step | Action |
|------|--------|
|------|--------|

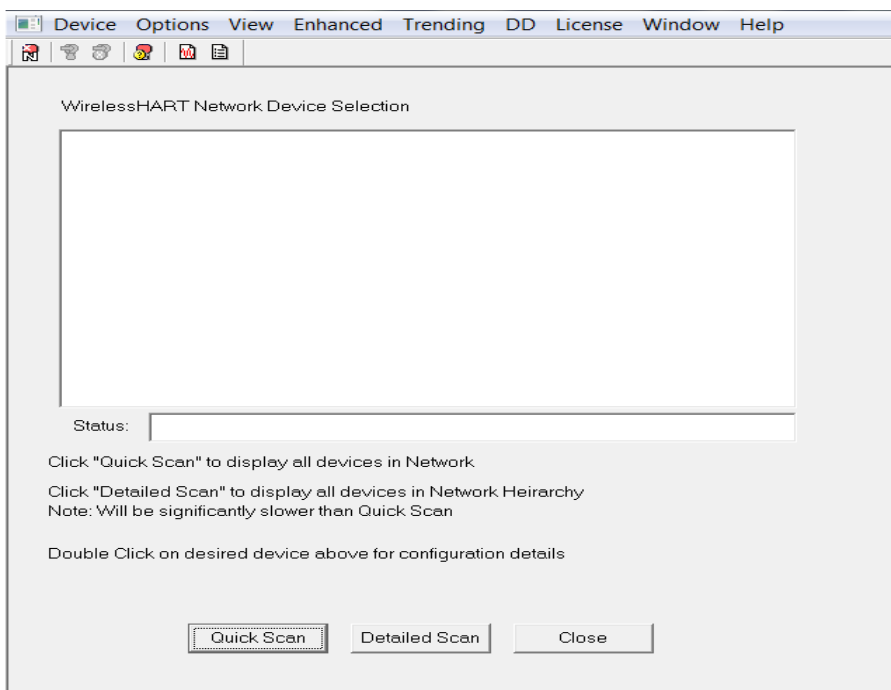
- 4 Click “Browse” and go to the location of the DD that is to have the label updated.
- 5 The “DD Info” section will be populated. Confirm that it is the correct DD. Below is an example of 0000c2/0021/0201.fm6:

- 6 Input a “Label” for the DD if necessary. Click “Update Label” to update the label.
- 7 Below is the new “Available DDs” sections where 000013/0002 is given the label “Updated Label”:

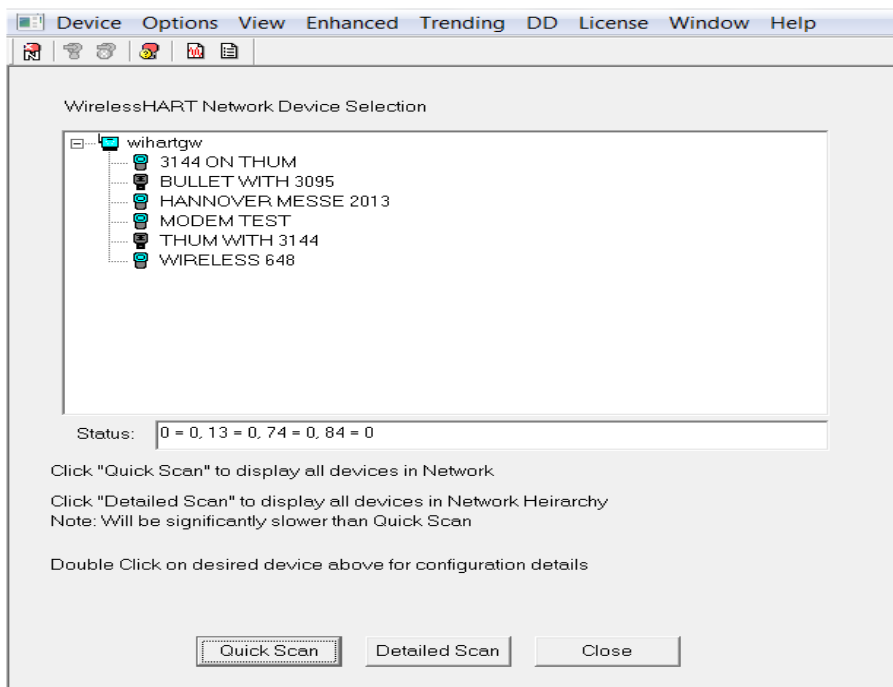
6.15 HART-IP Communication

Step Action

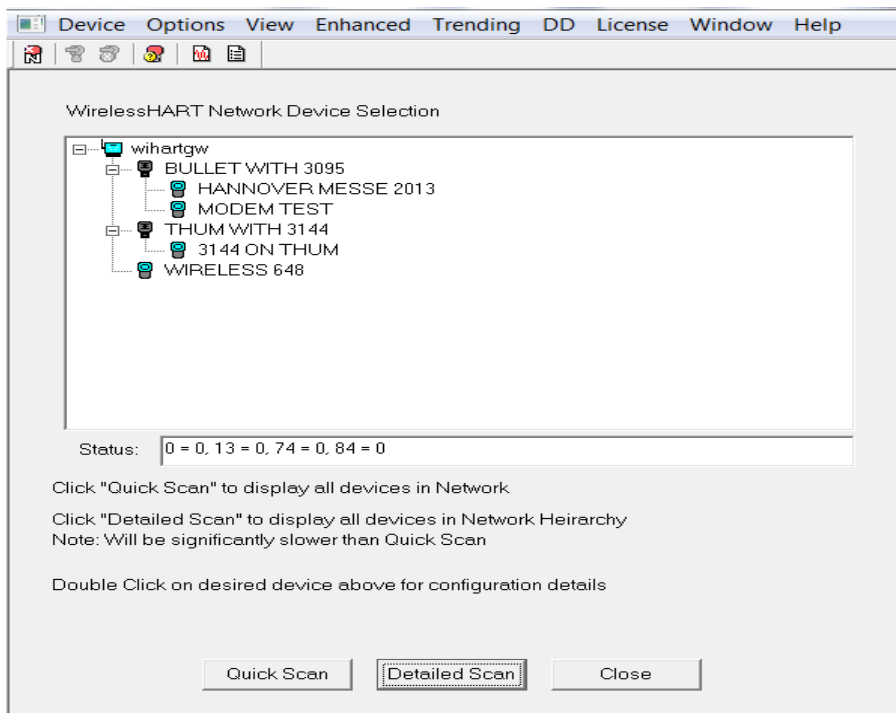
- 1 Ensure that settings for HART-IP have been made in the Options->Basic menu. Note that a HART Modem is NOT required, only Ethernet access to the WirelessHART Gateway.
- 2 Click on “New Device” icon to start the connection process. The following screen will appear.



- 3 Click on “Quick Scan” to provide a simple list of all the devices on the WirelessHART network. Below is a sample screen:






- 4 Click on “Detailed Scan” to display all the devices as a heirarchy. This will show what transmitters are connected to each WirelessHART adapter. Note that this listing takes significantly longer to generate than the Quick Scan. Below is a sample screen.

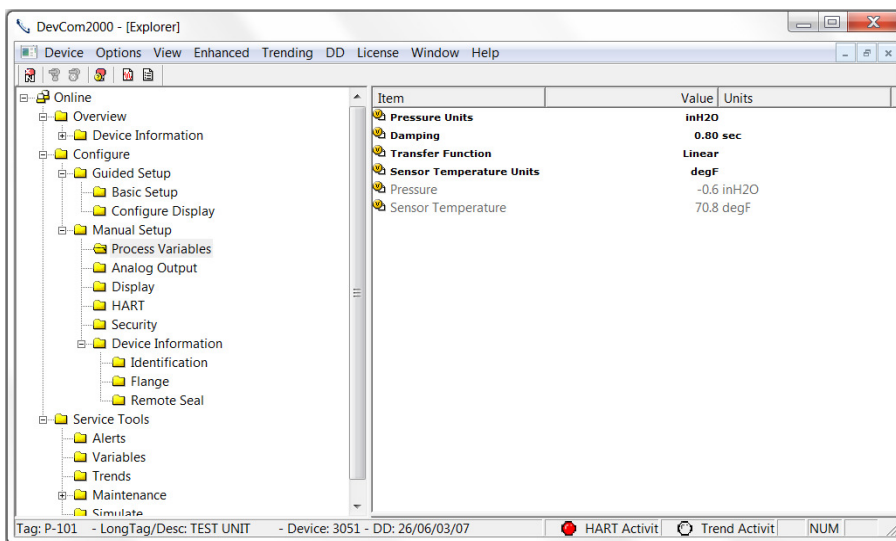


For both types of list displays, the following icons are used:

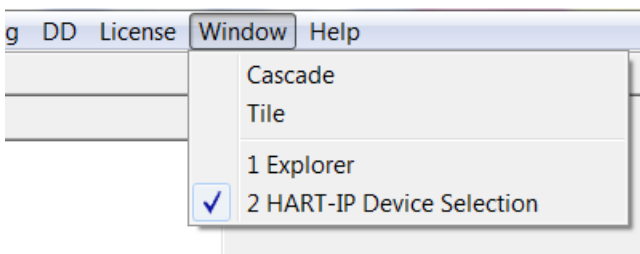
HART-IP Icons

-  = Gateway
-  = Adapter, *WirelessHART*
-  = Transmitter

- 5 Once a device list has been created, double click on the desired device to configure/review using DevCom2000. Below is a sample screen:



- 6 To switch to a different device on the *WirelessHART* network: **Select Window** on the MENU bar, then click on **HART-IP Device Selection** to bring up the **Device Menu Tree** again.



Appendix A

Troubleshooting Guide

For most error messages, there is a selection for “Com Troubleshooter”. This program will guide you through the steps to solve your communication problems. Below is a quick summary:

Problem:

Will not communicate

Hardware Check:

Verify the following:

1. Com port number on Preferences Dialog box matches HART interface hardware.
2. Loop power supply is on.
3. Loop resistance between 250 ohms and 1Kohms.
4. Loop current within HART limits.
5. If multi drop configuration, all transmitters in loop have unique addresses.
6. HART interface hardware connected across loop resistor or across transmitter terminals.

Software Check:

Sometimes the application does not end cleanly and the communication process is still running in an unknown state. When this happens, it must be closed out before restarting DevCom2000.

Perform the following:

1. Close DevCom2000.
2. Press **CTRL-ALT-DEL** to bring up the Windows Security Screen.
3. Click on Task Manager.
4. Select the Processes tab.
5. In the list of running tasks, select HModemSvr.exe.
6. Click on the End Process button on the dialog box.
7. Restart DevCom2000.

Problem:

Get the message “Error opening COMx”

Verify the following:

1. Com port number on Preferences Dialog box matches HART interface hardware.
2. HART interface hardware installed.

Problem:**No data in the Communication Log**

Verify the following:

1. Verify that the “HART Activity” LED indicator on the bottom of the screen is flashing red. If not, open a menu that has dynamic data that is being refreshed like PV or AO.
2. For Windows Vista and Windows 7 users, you may need to perform the following:
 - a) Open the “hosts” file using Notepad. It is located in the following directory:
C:\WINDOWS\system32\drivers\etc\hosts
 - b) Make sure this line appears (without preceding # character)
127.0.0.1 localhost
 - c) Make sure the following line does NOT appear:
::1 localhost
If it is there, comment it out by placing # character in front like this:
#::1 localhost
 - d) Restart the Communication logger.

Note: To modify this file, you may need to perform the following in Windows:

- a) Go to Control Panel->Folder Options
 - b) Select the View tab
 - c) Remove the check next to Hide extensions for known file types
 - d) Make the edit changes above
 - e) Save the document to your documents
 - f) copy the saved document to the above directory
 - g) Delete the original hosts file
 - h) remove the .txt extension from the new hosts file
3. Turn off firewall protection temporarily to see if it is blocking the TCP/IP communications between DevCom2000 and the Communication Logger.

Problem:**The system cannot find the path specified error box**

Try the following:

1. Verify that the device library (C:\HCF\DDL\Library) is on Drive C:
2. If not, copy to drive C.

Problem:**Activation by Internet blocked by Firewall**

Try the following:

1. Allow one time access to internet via your computer’s Firewall settings.
2. Disable Firewall.
3. Use manual activation method.

Problem:**Active Windows not shown in Windows drop down list**

Try the following:

1. Select Window->Cascade or Window->Tile.
2. All Windows will now be shown

Problem:**When using HART Server for WirelessHART in Windows 7, the device selection screen does not appear**

Try the following:

1. Start Windows Explorer.
2. Go to directory "C:\Program Files\ProComSol\Common"
3. Run "RegisterSELECT.bat" as an Administrator

Appendix B

Contact Information

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